



# THE ROLE OF MUSIC IN ADOLESCENT DEVELOPMENT

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## ABSTRACT

There is an increasingly robust literature of recent research findings that support the developmental importance of music in adolescence. However, this intriguing literature is not familiar to many developmental psychologists, possibly due to a lack of communication among researchers and because of publication trends in developmental journals. This review aims at informing on current knowledge of how music listening can play a role in the psychosocial development of adolescents. To this end, three arguments are discussed in light of recent empirical research: music influences important aspects of adolescent development; music can represent a protective and a risk factor; and music can serve as an adjunct component in prevention and intervention. Therefore, it is proposed how music is a developmental resource in adolescence. It is argued that research on the developmental role of music can create a window to the everyday psychological, social, and cultural needs of contemporary adolescents.

**Keywords:** *Music, Adolescents, Adolescent Development, Literature Review*

## INTRODUCTION

Music can have many social psychological impacts and meanings for people at different periods of their development (Hargreaves, Citation1986; McPherson, Citation2006; North & Hargreaves, Citation2008). It can be a mother's lullaby, an artist's exploration and expression, a performer's dream and profession, a listener's passion and leisure, a social setting's ambience and a signifier of ritual. Music is a resource of considerable intellectual, artistic, cultural, technological, and economical breadth and depth. Billions of dollars are invested in and generated by music across many domains (e.g. arts, entertainment, education, science), while serious legal consequences and societal issues concern the unauthorised sharing of music (North & Hargreaves, Citation2008). Young people, especially, devote huge amounts of time and money to music listening (Roberts, Henriksen, & Foehr, Citation2009), while the technological industry cleverly attunes music applications to resonate at the core of their multi-tasking computers. Listening to music is thus particularly important and ubiquitous in the contemporary lives of media-socialising and multi-tasking adolescents (Brown & Bobkowski, Citation2011; Roberts et al., Citation2009). This article will thereby argue that music has become a genuine developmental resource – young people would say a 'killer app' – that deserves much more attention from developmental psychology in adolescence.

## BUT CAN MUSIC HAVE ANY SIGNIFICANT INFLUENCE ON INDIVIDUALS?

At the outset, developmental psychologists may wonder whether music has any significant influence on some of the biological, psychological, and social factors that compose human nature. The answer seems to be yes; and prototypical examples can be provided.

## BIOLOGICAL EFFECTS

From an evolutionary perspective, music could be an evolved psychological mechanism in as much as it seems to have been potentially adaptive for increasing our fitness for survival in terms of better mate selection, social cohesion, synchronised group

effort, perceptual development, motor skill development, conflict reduction, safe time passing, transgenerational communication of culture, and self-regulation (Huron, Citation2003; McDermott & Hauser, Citation2005).

From a contemporary perspective, music is mediated by and impacts some of our biological structures and processes (Peretz & Zatorre, Citation2003). Findings from brain lesion and neuroimaging studies indicate that musical processing is embedded within a complex network of cortical and subcortical pathways (Peretz & Zatorre, Citation2005). Music activates neurotransmitters involved in pleasure (dopamine; Menon & Levitin, Citation2005), modulates hormones involved in stress (cortisol; Khalfa, Dalla Bella, Roy, Peretz, & Lupien, Citation2003), and social bonding (oxytocin; Nilsson, Citation2009). Research also reveals analgesic effects for music (Mitchell & MacDonald, Citation2006).

## PSYCHOLOGICAL EFFECTS

The psychological effects of music are obviously discussed throughout this article. But emotions are the quintessential example. In fact, the CitationOxford English Dictionary defines music as ‘That one of the fine arts which is concerned with the combination of sounds with a view to beauty of form and the expression of emotion...’ (1989, p. 126). Hence, it seems that common sense has explicitly taken for granted that music is mainly an emotional experience. The psychology of music and emotions helps to better understand emotions as synchronised responses (cognitive appraisal, subjective feeling, physiological response, expression, action tendency and regulation) to changes in the environment (Juslin, Liljeström, Västfjäll, Barradas, & Silva, Citation2008). This area of research also contributes to our understanding of how musical emotions interact with key psychological phenomena (e.g. cognitions, aesthetics, motivation, performance, creativity, personality, social behaviours, health, and cross-cultural similarities and differences; Juslin & Sloboda, Citation2010). Experimental methods developed by the psychology of music offer sound methodological and ethical strategies to induce and manipulate strong emotions in laboratory settings (Juslin & Västfjäll, Citation2008). Correlational studies are using *experience sampling methods* to shed light on how music can elicit complex patterns of positive and negative emotions during the unfolding of our daily lives (Juslin et al., Citation2008). Worthy of note, this field of studies is advancing our knowledge about the mechanisms explaining how music induces emotions (e.g. brain stem reflexes, evaluative conditioning, emotional contagion, visual imagery, episodic memory, and musical expectancy; Juslin & Västfjäll, Citation2008). Furthermore, a promising research direction is that music can serve the adaptive purpose of emotion regulation (Chamorro-Premuzic, Gomà-i-Freixanet, Furnham, & Muro, Citation2009).

## SOCIAL EFFECTS

Music has social effects which are so noticeable that CitationHargreaves and North have claimed ‘music has many different functions in human life, nearly all of which are essentially social’ (1997, p. 1). In infancy, lullabies promote a fundamental social bond, namely maternal attachment (Milligan, Atkinson, Trehub, Benoit, & Poulton, Citation2003). The potency with which music stimulates and modulates interpersonal relationships in social events (e.g. concerts, sporting events, parties, dates, dances, ceremonies, rallies, dinners) has led authors to refer to it as a ‘social lubricant’ (for example, Lewis, Citation2002, p. 364). When individuals become acquainted, they often use music preferences to manage social impressions, evaluate each other's similarity, and subtly acquire a social perception about the personality and values of the person they meet (Rentfrow & Gosling, Citation2006). For instance, music tastes are commonly used as sensible social matching criteria on the Internet (Rentfrow & Gosling, Citation2006). Music tastes can thereby be utilised as a ‘badge’ about one's personality and social status (North & Hargreaves, Citation2008). People also develop social schemas and even stereotypes about fans of different music genres (Rentfrow, McDonald, & Oldmeadow, Citation2009), and this can influence intergroup dynamics by shaping in-groups and out-groups that are based on different music tastes (Bakagiannis & Tarrant, Citation2006).

Nevertheless, the implications of this vast and rich psychology of music literature are not generally accessed in developmental psychology. At least two factors can explain why developmental psychologists can underestimate the importance of music in adolescence: lack of scientific communication; and trends of publications on music in developmental journals.

### **A DEVELOPMENTAL PSYCHOLOGY OF MUSIC IN ADOLESCENCE**

A developmental psychology of music in adolescence investigates the influence that musical behaviours, emotions, cognitions, and motives can have on normative and positive development, as well as psychopathology (Miranda & Gaudreau, Citation2011). In the last 20 years, studies have gradually documented the significance of music in adolescence (North & Hargreaves, Citation2008; Zillmann & Gan, Citation1997). Unfortunately, this increasingly robust psychology of music literature is not generally accessed in developmental psychology.

The overarching aim of this literature review is to build bridges between the psychology of music and developmental psychology in adolescence. It thereby provides a concise and representative summary of the extant literature on music in adolescence. This should inform developmental psychologists on how music listening is a resource that plays a role in adolescent development. In light of this, along with references to recent empirical findings, three arguments will be developed in support of the pertinence of music as a theme of research in adolescent psychology. First, music can influence key aspects of adolescent development. This central argument presents theoretical implications and draws research directions. Second, music can represent a protective and a risk factor, which is pertinent for researchers studying developmental psychopathology. Third, music can serve as an adjunct component in prevention and intervention, which is of particular interest to clinical psychologists and those working in prevention science for adolescents.

### **MUSIC IS IMPORTANT FOR THE DEVELOPMENT OF MANY ADOLESCENTS**

Adolescence is a period of transition and plasticity from childhood to adulthood, in which transactions – between a self-determined (and predisposed) individual and his/her changing (and stable) social environment – are intertwined within and across ecological systems as they cascade over time (Lerner & Steinberg, Citation2009a, Citation2009b; Masten & Cicchetti, Citation2010). This period of biopsychosocial reorganisation brings novel stressors, complex issues, and developmental challenges (Arnett, Citation1999) and most adolescents are able to adapt to this and thrive developmentally (Steinberg & Morris, Citation2001). Music is their soundtrack during this intense developmental period. On average, adolescents listen to music for up to three hours daily and accumulate more than 10,000 hours of active music listening throughout adolescence (Roberts et al., Citation2009; Tarrant, North, & Hargreaves, Citation2000; Zillmann & Gan, Citation1997). The huge amount of time they dedicate to music makes them young expert listeners. Moreover, their time spent listening to music keeps increasing thanks to ever more media-socialising and multi-tasking portable computers. This highlights the timeliness of studying music among adolescents of the Internet generation.

This review is thus grounded in the assumption that adolescents' self-initiated and ever more intense exposure to music occurs during a life period of plasticity in which they experience (and need to resolve) numerous developmental tasks, transitions, and issues (for example, Larson, Citation1995; Miranda & Claes, Citation2009; Schwartz & Fouts, Citation2003; Zillmann & Gan, Citation1997). This review's central theoretical implication is thereby that such developmental timing – the transaction between music and adolescence – opens a critical window in which music can influence at least seven major areas of development: aesthetics; identity; socialisation; emotion regulation and coping; personality and motivation; gender roles; and positive youth development.

### **MUSIC AND AESTHETICS**

Aesthetic development can pertain to how people develop their perception of beauty in great a many stimuli of life, including artistic work like music. Developmental psychology has actually understudied aesthetic and artistic development in youth (Lin & Thomas, Citation2002) and the psychology of aesthetics has generally focused on visual rather than musical experiences (but see Nieminen, Istók, Brattico, Tervaniemi, & Huotilainen, Citation2011). Arguably, adolescents are primarily exposed to huge amounts of auditory artistic stimuli (i.e. songs) from which they may develop an increasingly mature understanding for aesthetics and the arts. They listen to music because it sounds good – for its aesthetic pleasure (North, Hargreaves, & O'Neill, Citation2000). Although some may opine that studying aesthetics for music is not a priority in adolescent psychology, ironically it is serious business in other high-profile professional areas (e.g. music industry, marketing). In adolescence, exploring music tastes can develop a sense of competency through discerning the *cool* from the boring and the fashionable from the *passé* in youth culture. In fact, adolescence seems to be a critical period for developing musical tastes as they may develop into familiar cognitive prototypes through acculturation (Hargreaves, North, & Tarrant, Citation2006). In fact, a 21-month longitudinal study confirmed that aesthetic appreciation for music is developed in early adolescence and that it stabilises during late adolescence (Mulder, ter Bogt, Raaijmakers, Gabhainn, & Sikkema, Citation2010).

Hence, developmental psychology should study whether aesthetic development for music may stimulate adolescents' autonomous originality and relatedness to real or perceived social norms in terms of what is considered to be artistically and creatively 'beautiful' in a given culture and at a given time in history.

## MUSIC AND IDENTITY

Adolescence is a critical period for the gradual development of identity (Côté, Citation2009). Social media can provide opportunities for adolescents to explore potential selves and develop identity (Roberts et al., Citation2009). Kistler, Rodgers, Power, Austin, and Hill (Citation2010) showed that music is a source of social cognitive norms that impacts the development of adolescents' self-concept. Through structural equation modelling, Kistler and collaborators (Citation2010) found that adolescents evaluate their physical attractiveness and self-worth by comparing themselves with music media characters. Also, adolescents understand that music can be used as a resource to develop a social image (North et al., Citation2000). They use music as a 'badge' that shapes their peer groups and peer crowds, which are often known as 'musical subcultures' (Miranda & Claes, Citation2009; North & Hargreaves, Citation2008). These musical subcultures develop a youth culture identity and provide informational and normative social influences (Zillman & Gan, Citation1997). Popular musicians also serve as role-models or even idols (Raviv, Bar-Tal, Raviv, & Ben-Horin, Citation1996) that can influence adolescents through social learning (e.g. modelling). From a more sociological perspective, musical subcultures may provide resources for protest, resistance, and resilience when adolescents, as a social class, feel disrespected in their rights by adult authorities. For young ethnic minorities, music can be a resource for developing cultural identity. In fact, one's preference for music, songs, and dances from his/her heritage culture has been used as an indicator of ethnic identity (Phinney, Citation1990). And Saether (Citation2008) found that some adolescent immigrants can sometimes use music to shape their identity and promote cultural learning.

In their review of the literature, Hargreaves and collaborators' (Citation2006) noted that adolescents can use music preferences to enhance their social identity by creating exclusive group norms by which they distinguish their 'in-group' from an 'out-group'. A study by Bakagiannis and Tarrant (Citation2006) also suggested that music preferences can even create a more inclusive social identity that can supersede adolescents' more exclusive social backgrounds.

In sum, developmental psychology should take notice that music is not only a 'social lubricant' in adolescence (as it can be in adulthood). Music is a resource from which adolescents decide to explore possible selves, rehearse social roles, manage intergroup dynamics, and envisage future orientations (e.g. artistic careers) by observing their peers and favourite musicians.

### **MUSIC AND SOCIALISATION**

Peer socialisation, friendships, as well as parents are obviously very important during adolescence (Brown & Larson, Citation2009; Laursen & Collins, Citation2009). In terms of social transition from parents to peers during adolescence, many authors theorised that music preferences promote socialisation with friends, while causing some degree of disengagement from parents (for example, Zillman & Gan, Citation1997), which is in line with normative development (Brown & Larson, Citation2009). Selfhout, Branje, ter Bogt, and Meeus (Citation2009) have conducted a one-year longitudinal study which showed that similarity in music preferences does promote the formation of adolescent friendships. However, Miranda and Gaudreau (Citation2011) also found that while adolescents share similar music preferences with friends, they also share music preferences with their parents. It may be that adolescents of the early twenty-first century will increasingly share music preferences with both friends and parents without much controversy.

Adolescents understand how to listen to music to please their friends (North et al., Citation2000), which may foster their reciprocal liking. Music tastes thus involve impression management among peers (Finnäs, Citation1989). Even functional magnetic resonance imaging suggests that adolescents' conformity in music preferences is partially mediated by neural mechanisms (Berns, Capra, Moore, & Noussair, Citation2010). But recent sociometric evidence reveals only a moderate degree of similarity between adolescents' personal music tastes and those of their friends (Miranda & Claes, Citation2009). Hence, most adolescents seem to maintain personal music preferences that are not necessarily shared by friends. It is also intriguing that adolescents can report engaging in fantasising while listening to music, in which they imagine social scripts and rehearse social skills while using music as soundtrack (Miranda, Gaudreau, Morizot, & Fallu, Citation2012). Understandably, the capacity of music to evoke the presence of others may also explain that adolescents can report listening to music to alleviate loneliness (North et al., Citation2000).

Thus, by studying music in adolescence, developmental psychology would learn substantially more about how adolescents can socialise with peers, friends, and parents – whether real in interpersonal settings or even imagined while listening to music.

### **MUSIC, EMOTION REGULATION, AND COPING:**

Emotion regulation and coping are primordial for adolescents to successfully adapt to developmental issues, as well as to remain resilient amid everyday stress and stressful life events (Compas, Citation2009; Zimmer-Gembeck & Skinner, Citation2011). Adolescents feel that music is a resource that can fulfil some of their emotional needs, notably for the purpose of emotion regulation (North et al., Citation2000; Saarikallio & Erkkilä, Citation2007). Their emotion regulation through music may occur when they listen to music to distract themselves from distressing emotions, to find solace and validation, or even to experience venting (Schwartz & Fouts, Citation2003). However, music is not a panacea in itself as it can relate to either adjusted (self-reflection) or maladjusted (rumination) forms of emotion regulation (Greenwood & Long, Citation2009).

Young people also listen to music to relieve tension and distract themselves from worries (Gantz, Gartenberg, Pearson, & Shiller, Citation1978). In other words, they use music to cope with stress. This has often been theorised but rarely operationalised. Recently, Miranda and Claes (Citation2009) proposed a three-factor model of coping by music that measures emotional management, problem-solving, and avoidance through listening to music. It revealed that adolescents' depression was linked to more emotional management and avoidance, but to less problem-solving through music listening. Thus, coping by

music listening is complex as it involves both beneficial and deleterious patterns of coping strategies (Miranda & Claes, Citation2009).

Hence, developmental psychology should devote more attention to music as a developmental resource for emotion regulation and coping in adolescence. Music is abundant and ubiquitous, and these characteristics render it particularly practical for adolescents' everyday management of emotions and stress.

### **MUSIC AND POSITIVE YOUTH DEVELOPMENT**

Positive psychology is a scientific movement that promotes research on positive aspects of growth *in lieu* of psychopathology (Seligman & Csikszentmihalyi, Citation2000). Research on music and positive adolescent development seems to be in its beginning. Still, findings suggest that adolescents' emotional well-being is bolstered when they can experience stronger positive emotions (versus negative emotions) from music, as well as when they can develop more musical relatedness (in terms of music tastes) with friends and family (Miranda & Gaudreau, Citation2011). Furthermore, music lessons in youth may have small but robust benefits for intellectual abilities and academic achievement (Schellenberg, Citation2006). And music education can promote peak experiences ('flow') and creativity among students (MacDonald, Byrne, & Carlton, Citation2006).

In closing, developmental psychology would probably benefit from capitalising on the huge amounts of music that adolescents already listen to anyway and every day. More research on the role of music in positive adolescent development is not only about how adolescents could use music to optimise their development, but mostly about how adolescents have been maintaining resilience and thriving by creatively using music as an everyday resource.

### **MUSIC CAN REPRESENT A PROTECTIVE AND A RISK FACTOR FOR PSYCHOSOCIAL DEVELOPMENT**

It seems that every generation has its share of music exploring unconventional, anti-authoritarian, or controversial themes that appeal to adolescents, but is of concern to many adults, parents, politicians, and healthcare professionals (North & Hargreaves, Citation2008).

### **EXTERNALISING PROBLEM BEHAVIOR**

Most research on music and adolescent development examined the premise that songs that are considered more problematic (e.g. anti-authoritarian, obscene, degrading, antisocial, prejudicial) – in a given culture and at a given time – may constitute a risk factor for externalising problem behaviours (e.g. antisocial behaviour, violence, theft). North and Hargreaves (Citation2008) reviewed this literature and concluded that so-called 'problem music' (e.g., heavy metal, hip-hop, Goth) can be linked to more externalising behaviours in adolescence. However, they pointed out many research caveats, such as that most evidence is correlational and cross-sectional and thereby precludes any demonstration of causality and even prediction or risk. Baker and Bor (Citation2008) also reviewed this literature and concluded that controversial music tastes are not causes of mental health issues, but rather (or perhaps) markers of emotional vulnerability.

On the other hand, studies using experimental designs indicate that antisocial songs seem to influence antisocial thoughts and feelings (Anderson, Carnagey, & Eubanks, Citation2003). Can this extend to actual behaviours? A recent longitudinal study utilised cross-lagged structural equation modelling to confirm that music genres that explore and express more controversial themes (heavy metal and hip-hop) can indeed predict more externalising problem behaviours during adolescence (Selfhout, Delsing, ter Bogt, & Meeus, Citation2008). These longitudinal findings are provocative, robust, and they can be grounded in well-known theoretical mechanisms (e.g. cognitive priming, excitation transfer, social cognition, and desensitisation; Brown &

Bobkowski, Citation2011), which can predict that repeated exposure to aggressive songs would reinforce and prime aggressive behaviours in some vulnerable adolescents. Lastly, it should be underscored that, unfortunately, research has focused almost exclusively on music as a risk factor rather than as a protective factor against externalising problem behaviour in youth.

### **INTERNALISING PROBLEM BEHAVIOUR**

There is a gradual increase of studies on music and internalising problem behaviour (e.g. mood dysregulation, depression, anxiety) in adolescence. CitationMiranda, Gaudreau, Debrosse, Morizot, and Kirmayer (in press) reviewed this literature and suggested that listening to music could potentially influence (reduce or increase) subclinical internalising symptoms in as much as music involves emotion regulation and coping, social cognitive influences, as well as psychotherapeutic effects. They noticed that cross-sectional studies found concurrent links between music preferences (e.g. heavy metal) and internalising symptoms. However, they also pointed out that longitudinal evidence revealed that music preferences (including heavy metal) are not risk factors for internalising symptoms among adolescents (for example, Miranda & Claes, Citation2008).

Nonetheless, Primack, Swanier, Georgiopoulos, Land, and Fine (Citation2009) conducted a seven-year longitudinal study which found that adolescents' excessive exposure to media (television, videocassettes, computer games, and radio) was a risk factor for depression symptoms in youth. According to the authors, among various mechanisms, this risk factor may be explained by young individuals' self-comparison with unattainable images, anxiety-provoking content, or displacement of protective experiences. Given that music is at the core of multi-tasking, one may posit that certain negative songs or videos may have a compounding effect on the overall impact of media on depression. However, researchers should remember that adolescents' favourite songs also convey plenty of positive messages. Accordingly, there is indication that some of today's most popular music can act as a protective factor against internalising symptoms. The six-month longitudinal study of Miranda and Claes (Citation2008) demonstrated that listening to soul music (e.g. hip-hop, R&B) acted as a protective factor against depression symptoms among adolescents. This may be explained to some extent by the fact that African American music can often convey positive lyrics, powerful narratives, and vivid imagery, which elegantly explore themes of resilience, self-esteem, coping, self-determination, relatedness, and cultural pride.

### **RISKY HEALTH BEHAVIOURS:**

The potential influence of music on adolescents' risky behaviours (e.g. substance use, risky sexuality, self-harm) is also receiving a lot of attention. Popular songs can convey great amounts of messages about drugs; and adolescents' exposure to such lyrics is associated to their actual substance use (Primack, Douglas, & Kraemer, Citation2009). The influence of musical subcultures on adolescents' substance use also seems to be partially mediated by their socialisation with substance using peers (Mulder, ter Bogt, Raaijmakers, Gabhainn, Monshouwer, & Vollebergh, Citation2009). Nonetheless, Miranda, Gaudreau, Morizot, and Fallu (Citation2012) used a sociometric design (peer nomination) to show that fantasising while listening to music may act as a protective factor against the influence of peer substance use on individual substance use in adolescence.

In terms of risky sexuality, a two-year follow-up study found that adolescents' exposure to music with degrading sexual lyrics predicted early sexual activities and intercourse (Martino et al., Citation2006). Another 12-month longitudinal study showed that greater exposure to 'gangsta' rap music predicted risky sexual behaviours among African American female adolescents living in lower socio-economic-status neighbourhoods (Wingood et al., Citation2003).

North and Hargreaves (Citation2008) pointed out that the potential links between music preferences and self-harm are obviously most alarming. But they conclude that preferences for so-called 'problem music' is probably a marker of vulnerability rather than a causal factor. Young, Sweeting, and West (Citation2006) conducted an eight-year longitudinal study with adolescents. Their findings showed that fans of the Goth music subculture were at greater risks for self-harm and suicidal behaviour, but possibly due to mechanisms of peer selection rather than peer modelling. Finally, it should also be mentioned that adolescents who often used MP3 players engage in more risky listening behaviours (e.g. listening with earbud-style earphones at high volume) that can lead to hearing loss (Vogel, Verschuure, van der Ploeg, Brug, & Raat, Citation2009).

### **MUSIC CAN REPRESENT AN ADJUNCT COMPONENT IN PREVENTION AND INTERVENTION**

Prevention and intervention based on music can be useful among adolescents because such initiatives use developmentally relevant elements of everyday youth culture.

#### **PREVENTION**

Music can be used for the purpose of prevention in adolescence. Brown and Bobkowski (Citation2011) underscored that meta-analytic estimates of health promotion through media reveal modest effects that may nevertheless be interesting when scaled on large populations. There are indications that music-based prevention initiatives can be useful in youth, because adolescents recognise relevant elements of their youth culture within it. For instance, Lemieux, Fisher, and Pratto (Citation2008) asked musically talented adolescents (who were also opinion leaders among their peers) to write, record, and distribute music about HIV prevention to their peers. This strategy revealed effective as it integrated evidence-based practices from the information, motivation, and behavioural skills model. The programme's positive outcomes regarded many aspects of HIV prevention, including motivation, behavioural skills, condom use, and testing behaviours.

But what about preventing the adverse consequences of media itself? Educational strategies that promote adolescents' reflective/critical thinking about the meanings and motives of media products (e.g. advertisements) have shown promising outcomes (Brown & Bobkowski, Citation2011). Hence, sensitive and respectful educational interventions, such as media literacy, may help adolescents to maintain (or develop) intelligent behaviours *vis-à-vis* their favourite songs.

#### **INTERVENTION**

A recent meta-analysis, of prospective evaluation studies, indicated a dose effect in which the numbers of music therapy sessions (with emotional, social, and motivational components) predicted less depressive symptoms among clients (Gold, Solli, Krüger, & Lie, Citation2009). Interestingly, in an earlier meta-analysis, Gold, Voracek, and Wigram (Citation2004) found that music therapy had a medium to large positive effect among children and adolescents with psychopathology. In terms of clinical practice, McFerran (Citation2010) suggests that music therapies can judiciously address the developmental needs of adolescents by intervening on their identity formation, resilience, connectedness, and competence. Moreover, it seems that music therapists also need to develop competence in addressing cultural diversity among their young clients for whom music can have similar and different cultural meanings (for example, Jones, Baker, & Day, Citation2004).

**CONCLUSION:** This literature review offered three arguments in favour of increasing developmental research on music in adolescent psychology. First, music can influence key aspects of adolescent development – for instance, aesthetics; identity; socialisation; emotion regulation and coping; personality and motivation; gender roles; and positive youth development. This list

of music's developmental impacts is not exhaustive, but it nonetheless serves as a sound basis. Second, music can act as a protective and a risk factor during adolescence. These factors are complex and require considering the interplay among the person, the context, and the music. Third, music can serve as an adjunct component in prevention and intervention for adolescents. This is encouraging as adolescents may benefit more from preventive and clinical initiatives that reflect and respect their youth culture.

There are prospects for this burgeoning area of research. First, it is theoretically grounded in everyday youth culture within which music holds a key role. Second, it builds on and extends theories of development by delving into an everyday phenomenon that is ubiquitous in adolescence, namely music. Third, it uses sophisticated data analysis (e.g. structural equation modelling), statistical controls, longitudinal designs, large samples, experimental and sociometric designs to support the various hypotheses regarding the role of music during adolescence. Fourth, the studies are being conducted in different parts of the world (e.g. Australia, Canada, Netherlands, Sweden, the United Kingdom, the United States), thereby reminding that music is important for many adolescents (and researchers) across many societies. Finally, it can generate developmentally attuned practices for supporting and improving prevention and psychotherapy among adolescents who listen to music.

However, there are also major caveats. First, there is no nomenclature in which the developmental correlates of music can be situated within an integrative roadmap. Second, there is a flagrant lack of cultural studies, especially among ethnic-minority adolescents for whom music can be a cross-cultural and inter-generational resource. Third, music is usually studied in a vacuum, as though no other social media (e.g. social networks on the Internet) or physical activities (e.g. dancing to music) are involved. Fourth, there seems to be limited communication between researchers and therapists, despite their common interest in music. Lastly, there is a scarcity of programmatic mixed-method research that attempts to replicate findings by combining different factors (biological, psychological, social, and cultural) and methods (e.g. quantitative, qualitative, experimental, longitudinal). To conclude, music can represent a developmental resource and psychological research on music opens up a scientific window to the psychological, social, and cultural needs of contemporary adolescents. Therefore, building bridges between the psychology of music and developmental psychology is an attuned initiative to better listen to the everyday sounds of adolescence.

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