

Hitting the right note for child and adolescent mental and emotional wellbeing: a formative qualitative evaluation of Sistema Scotland's "Big Noise" orchestral programme

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Abstract

Purpose – Previous research emphasises the need for preventative interventions to reduce mental health problems among disadvantaged children and adolescents. There is however little consensus concerning the delivery and impacts of such interventions particularly non-clinical, arts-based models delivered within community settings. The purpose of this paper is to begin to address this deficit through a qualitative assessment of the short- to medium-term impacts to participants' mental and emotional wellbeing within Sistema Scotland's Big Noise orchestral programme.

Design/methodology/approach – Semi-structured interviews, observation, participant drawing exercise, participatory filmmaking, focus group and analysis of programme engagement were undertaken to examine the mental and emotional wellbeing impacts of the programme which are observable at this early stage of programme delivery and participants' lives.

Findings – The qualitative findings indicate that participation in the Big Noise programme enhances participant mental and emotional wellbeing in three ways; first, the happiness and enjoyment of taking part in the programme and orchestra, particularly from music making; second, the security, belonging and relationships fostered through participation; the quality of musician/participant relationship is important here as is programme design which enables support, routine and structure; and third, increased pride, confidence and self-esteem, as a result of acquiring difficult musical skills, receiving regular praise and having frequent opportunities to demonstrate these acquired skills through regular orchestral performances.

Originality/value – There is little evidence or understanding of community-based, preventative, arts interventions like Big Noise: their delivery, their life-course impacts and their potential contribution to mental health and to addressing social and health inequalities. The causal pathways in the field are under-theorised. These early findings are important as they serve as an important basis from which to consider the programme's wider and longer term impacts, which will be assessed through an on-going longitudinal, mixed method summative evaluation.

Keywords Health inequalities, Early intervention, Child and adolescent mental health, Arts-based approaches, Preventative approaches, Sistema Scotland

Paper type Research paper

Received 2 November 2015
Revised 12 January 2016
20 January 2016
Accepted 22 January 2016

The authors would like to acknowledge the staff at Sistema Scotland and Big Noise for contributing their time and energy to this study.

Introduction

Sistema Scotland is a charity on a mission to transform lives through music. Through its Big Noise programme Sistema Scotland believes that children from disadvantaged backgrounds can gain significant social and wellbeing benefits and acquire a range of life skills by playing in a

symphony orchestra. Based on the Venezuelan El Sistema model (Manjino, 2012), Sistema Scotland uses music making to foster wellbeing, confidence, pride and aspiration among the children and young people taking part.

Big Noise Raploch was established in 2008 and Big Noise Govanhill in 2013. Both sites deliver an accessible, intensive, long-term orchestral programme for preschool and school-age children and young people (currently totalling approximately 1,300 participants). A variety of in-school (embedded within the school curriculum) and after-school (optional) music-teaching formats are delivered, as are a range of concerts, trips and activities. Sistema Scotland is at a pivotal stage of its development as the programme seeks to expand Big Noise delivery across Scotland. The Glasgow Centre for Population Health (GCPH, www.gcph.co.uk) is leading the evaluation of Sistema Scotland's Big Noise programme in Govanhill and Raploch. The evaluation aims are to elucidate key features of Big Noise delivery and describe the impacts of the programme recognising variances in participants' age groups, ethnicities, degrees of need and programme engagement.

This paper presents formative findings from an early qualitative component of the wider longitudinal, mixed method, multi-disciplinary evaluation. Its focus is on identifying and assessing the qualitative evidence for the impacts of the Big Noise Raploch and Big Noise Govanhill programmes on participants' mental and emotional wellbeing in the short- to medium-term. The full initial evaluation findings, including a health economic analysis, are available from the GCPH website (Glasgow Centre for Population Health (GCPH), 2015). Evaluation fieldwork was undertaken over a 19-month period (September 2013-March 2015). When the fieldwork began in September 2013, Big Noise Govanhill had been operating for approximately six months, and Big Noise Raploch had been established for five years, six months.

Socioeconomic inequalities in health are well documented in both public health and social science research (Mackenbach *et al.*, 2008). However, less is known about socioeconomic inequities and mental health problems in childhood and adolescence. Given that a sizeable proportion of mental health problems among adults begin during the early years (Roza *et al.*, 2014), this life stage should be a priority area of investigation. A 2013 systematic review reported that disadvantaged children and adolescents were two to three times more likely to develop mental health problems than their more affluent peers (Reiss, 2013). The review emphasised the need for preventative, early years interventions to reduce mental health problems among disadvantaged populations. There is, however, little consensus as to how to effectively deliver such interventions particularly non-clinical, community-based models such as the Big Noise (Kieling *et al.*, 2011).

The arts have been used in a variety of settings to enhance mental health and wellbeing, including as a participatory therapy to aid mental health recovery through self-discovery, self-expression and the formation of new social relationships and identity (Van Lith *et al.*, 2013). Among children and young people aged 11-18 years, participation in creative activities can have a positive effect on behavioural changes, self-confidence, self-esteem, levels of knowledge and physical activity (Bungay and Vella-Burrows, 2013).

The GCPH commissioned a series of systematic reviews concerning the impacts of art on health and wellbeing. Published in 2014, and examining evidence from the previous ten years, two of these considered: the impacts of art attendance and participation on health and wellbeing (Glasgow Centre for Population Health (GCPH), 2014a); and the contributions of community-based music programmes to child and adolescent health and inequalities (Glasgow Centre for Population Health (GCPH), 2014b).

In total, 25 papers met the inclusion criteria for the first systematic review (GCPH, 2014a). In terms of direct creative participation in the arts, eight studies provided reliable evidence that active music making can play an important role in addressing health issues; impact pathways centre on evidenced improvements to mental, emotional and social wellbeing among participants. Moving to broader arts and cultural attendance, six large scale longitudinal studies and one randomised controlled study reported that greater arts attendance was a significant protective factor against depression, playing an important role in mental health in later life. There was also evidence that attendance at cultural events is associated with better survival, longevity and self-rated health. Eight out of 25 studies described their theoretical underpinning: these converge around benefits to mental, emotional and social wellbeing as a result of arts

participation and attendance. Theories cited include: the activity theory of aging (Lemon, 1972), social capital theory (Bourdieu, 1986), self-determination theory (Deci and Ryan, 2002) and flow theory (Csikszentmihalyi, 1997).

Only eight papers met the inclusion criteria for the systematic review concerning community-based music programmes (GCPH, 2014b). Methodological limitations meant that no firm conclusions could be drawn about impacts or effectiveness; and there was little evidence that community-based music engagement reduces social inequalities. The settings and music programmes described in these papers were so heterogeneous that meaningful synthesis of findings was precluded.

Future research needs to significantly advance understandings of the pathways that could connect community-based music programmes with health and wellbeing outcomes. The systematic reviews conclude that research designs, evaluations and analytical rigour need to improve to allow comparable, transferable and credible impact assessments of community-based music programmes. Qualitative designs are particularly important to illuminate the range and complexity of potential impacts and how they relate to programme design (Staricoff, 2006). Robust approaches would also align life-long impact pathways with appropriate longitudinal quantitative analysis concerning a range of potential life-course outcomes.

Methods

The framework for the longer term GCPH-led evaluation of Sistema Scotland is consistent with the recommendations from the systematic reviews (Harkins, 2014). At this early stage, the data collected has been primarily qualitative, drawing on interviews, focus group and creative methods with children and young people. Given the complexity and potential range of impacts at play, the evaluation as a whole approached qualitative investigation from a grounded theory perspective (Strauss, 1994), in order to allow impacts and how they relate to programme characteristics to emerge from the data and analysis, rather than to test a pre-defined and potentially limiting theory (or theories) of change. Moreover, although Sistema Scotland has a strong organisational ethos and clear aims and objectives, it did not have an explicit theory of change model for its intervention at the outset of data collection.

This section outlines the methods of data collection and analysis used in identifying the impacts of Big Noise on participants' emotional wellbeing in the short- to medium-term. The results below also include and analysis of secondary socio-demographic quantitative data routinely gathered by primary and secondary schools operating within the Raploch and Govanhill Big Noise sites.

Observation

In total approximately 1,500 hours of observation of programme delivery took place across both the Raploch and Govanhill Big Noise sites, as well as team, management and partnership meetings. This method was deployed at the outset of the evaluation to (a) familiarise the researchers with the detail and reality of programme delivery and (b) to form some initial themes characterising intervention delivery and impact that could provide some structure to on-going data collection. The two researchers (LG and AC) took unstructured notes independently, which were then typed, shared and discussed at regular intervals throughout the early stages of planning and data collection. The issues and themes that arose from these initial observations formed the basis of the codes used in initial analysis of the qualitative data collected.

Semi-structured interviews

Semi-structured interviews were conducted with three groups: front-line intervention staff and volunteers (63); intervention management staff and board members (11); and intervention partners (52). The first two groups were recruited by e-mail with a face-to-face follow up request. It was made clear that participation was optional and confidential. This yielded participation rates of 72 per cent and 58 per cent for the first two groups, respectively. These two groups were asked to reflect on the strengths of the organisation, areas for improvement and to describe its positive and negative impacts, giving specific examples.

The third group included a number of professionals working directly with Big Noise participants outside of the programme, for example nursery, classroom and head teachers, educational psychologists and community police officers, as well as a range of strategic partners including city council managers and managers in other music and orchestral organisations. A full list can be found in the full evaluation report (GCPH, 2015). They were also asked about the strengths of the intervention, areas for improvement and, in the case of those in direct contact with intervention participants, for specific examples of intervention impact.

Participant drawing exercise (Big Noise Govanhill participants)

Participants at Big Noise Govanhill (110 children, aged six to nine years) took part in a session with the research team in which they were asked to draw a picture to show the things they liked about Big Noise. After a five minute break during which a game was played, the children were then asked to draw a picture of the things they did not like about Big Noise. Children were given 15 minutes to complete each of their drawings, during which they were seated in groups of four to seven with one researcher at each table. During the drawing activity the researcher asked each of the children to describe what they were drawing and subsequent questioning explored how participation in Big Noise made them feel. These discussions were recorded and transcribed verbatim.

Parents were informed of the exercise in writing and were given the opportunity to opt their child out of the session, although none did so. Where children stated they did not want to participate in the drawing activity, they were allowed to use their paper for free drawing. All children in attendance on the days during which the drawing activity was organised were asked to take part; 88 per cent of participants consequently took part. Although the drawings and verbal contributions were anonymous, the drawings were numbered by table and digital copies of the drawings were subsequently embedded in the interview transcripts to assist with data analysis (see below).

Participatory filmmaking exercise (Big Noise Raploch participants)

A film maker was commissioned to work with six Big Noise Raploch participants, aged between 12 and 14 years, who were selected by programme staff based on their consistency of engagement with the programme. The purpose of the film was to capture the experience of participating in Big Noise, although the content and form was designed entirely by the young people. Ideas for the film were developed during six one-hour-long group discussions, which included the film maker and two members of the research team (LG and AC), and were recorded and transcribed verbatim.

The young people's decision was to produce a documentary that included interviews with a wide age range of intervention participants, including those attending Raploch's special needs school, as well as parents and Big Noise staff. Interviewees were asked to reflect on the impacts of the programme in age-appropriate language. These interviews, alongside the discussion transcripts, constituted the data for this method. The film can be viewed at: www.youtube.com/watch?v=M2Oh7PYM1zs

Focus group (Big Noise Raploch participants and non-participants)

Nine girls aged between ten and 16 years old participated in the focus group; five had been previously involved in the Big Noise programme and had since left, and four were still active participants. Participants were selected by a local youth organisation in Raploch and the focus group took place during the youth group's usual evening session on their premises. Participants were asked to talk about the strengths, weaknesses and impacts of the intervention, with the aid of age-relevant materials and tools (such as mind maps and creative group activities). The group preferred not to have their discussion recorded, but the researchers took extensive notes and copies of the visual aids the participants produced.

Case studies

In total, 14 case studies were undertaken to explore how participation in the programme and its impacts were embedded in children and young people's lives outside of the intervention. Case studies were selected to include those who had strong participation in the programme, those

whose engagement had been intermittent and those who had ceased to attend. Case studies were selected with the assistance of intervention staff.

Initially, case studies were written up following a one-to-one interview with participants' key musician at Big Noise. Subsequently, classroom teachers (four), parents (three) and the intervention participants (three) themselves were approached by telephone and face-to-face to provide their perspectives. Numbers in brackets indicate those who were successfully interviewed on this topic. For all interviewees, questions focused on how participation had impacted on all aspects of participants' lives. Quotes from case studies are included in this paper.

Data analysis

Data were analysed sequentially. Transcripts of the semi-structured interviews were initially coded using broad themes developed from observation of the programme, with significant scope for the development of new codes. Two rounds of coding by (LG and AC) were followed by discussion with the wider research team (CH and CT) in order to refine themes. Transcripts from subsequent methods of data collection were coded in the same manner.

Once coding was complete, themes were discussed and further refined by the research team. Following this, logic models of the observable short and medium-term impacts and the theorised long-term impacts of the programme were developed. These models were then further refined during workshops with front-line and management staff at Big Noise in both Raploch and Govanhill. The full impact models are available within the initial findings report available from the GCPH website (GCPH, 2015). The results that follow focus only on those impacts that pertain directly to the mental and emotional wellbeing of participants.

Finally, Glasgow City Council and Stirling Council provided detailed demographic data concerning Big Noise participants and the wider target populations (routinely gathered by schools). This enabled an assessment of: what proportion of eligible children attended the programme; and whether the intervention was reaching those who required additional support. Please note variances in data available between Big Noise sites in Raploch and Govanhill.

Ethical approval

Approval for the qualitative methods described above was granted by the University of Glasgow College of Social Science Ethics Committee.

Results

The results below begin with a quantitative analysis of programme attendance and engagement. This provides an overview of the numbers and characteristics of the children and young people being reached by the intervention. This is followed by the results of the qualitative data analysis. The full evaluation report describes seven participant impact pathways (GCPH, 2015). This paper presents findings from one of the seven pathways focusing on participant mental and emotional wellbeing impacts. Analysis identifies three sub-themes of impact within this pathway: happiness and enjoyment; security, belonging and relationships; and confidence and self-esteem. Illustrative quotes are included within the description of these themes.

Quantitative results: programme engagement

Both Raploch and Govanhill are communities experiencing multiple deprivation, higher unemployment and significantly worse health compared to the Scottish average. At the time of data collection in 2014, 380 children from nursery to Primary 7 (aged 3-11) were in receipt of the Big Noise Raploch music education in-school programme. A total of 326 Children and Young People, from Primary 3 to Secondary 4 (aged 6-15 years) were also eligible for the more intensive after-school orchestra programme. Overall, half (160) of the eligible population attended the after-school programme, with a third having attended but left (110) and 17 per cent having never attended.

Girls were more likely to attend than boys. Children and young people who were “looked after” by the Local Authority were more likely to attend the programme, but those who had additional support needs and those on a Staged Intervention at school were less likely to attend and more likely to stop attending. School attendance was higher among Big Noise participants than the rest of the target population. For a full socio-demographic profile of Big Noise Raploch after-school engagement and explanation of key terms please see Table I.

The Govanhill programme was larger in scale, with 650 children in receipt of the Big Noise in-school programme in nursery to Primary 2 (aged 3-6). A further 405 children in Primary 3 and 4 (aged 6-8 years), were eligible to attend the after-school orchestra programme. One third (125) of those eligible to attend the after-school programme did so, with 28 per cent (113) having previously attended but left the programme and 41 per cent having never attended. Lower participation rates are likely to reflect the fact that this programme was only two years old in 2014, compared with Raploch’s seven years in operation, as well as a range of language and cultural barriers present in Govanhill compared to Raploch.

While children living in the most deprived postcodes in Govanhill were more likely to attend and less likely to stop attending, children from an ethnic minority, with English as an additional language, and with additional support needs were all less likely to attend and more likely to stop attending the after-school programme. School attendance was again higher among Big Noise participants than those who did not engage. For a full socio-demographic profile of Big Noise Govanhill after-school engagement and explanation of key terms please see Table II (please note less data were available for analysis for Govanhill population).

Table I Socio-demographic analysis of Big Noise Raploch after-school programme participation

		<i>All Scottish pupils</i>	<i>Pupils eligible for Big Noise</i>	<i>Big Noise attendees</i>	<i>Former Big Noise attendees</i>	<i>Observations</i>
Pupil numbers		676,955	326	160	110	Half of eligible pupils attend, 34% have attended at some point and 17% have never attended
Gender	M	50%	48%	41%	48%	Female pupils are more likely to attend than male pupils
	F	50%	52%	59%	52%	
Identify as “White: Scottish” or “White: British”		85%	89%	90%	95%	The ethnicity of attendees is similar to eligible population
English is the main language spoken in pupil’s household		94%	96%	99%	97%	Pupils with English as an additional language are slightly less likely to attend
“Looked After” by the Local Authority	C ^a	1.4%	7.7%	11.0%	5.2%	Pupils who are looked after are more likely to attend and less likely to stop attending
	P ^b	ND	3.4%	3.0%	3.2%	
Average school attendance		92%	89%	93%	86%	School attendance is higher among attendees and lower among former attendees
Proportion of school absences that are unauthorised		29%	49%	46%	39%	Unauthorised absence is lower among attendees and, especially, former attendees
Pupils with additional support needs (ASN) ^c		20%	40%	36%	47%	Pupils with ASN are slightly less likely to attend and more likely to stop attending
Pupils on a staged intervention (SI) ^d		ND	56%	52%	70%	Pupils on an SI are slightly less likely to attend and more likely to stop attending

Notes: ^aC refers to children and young people who are currently looked after by Local Authority Social Care Services; ^bP refers to the proportion of children and young people who were at one stage looked after but are not currently; ^c“Additional Support Needs” refers to when the child or young person is, or is likely to be, unable to benefit from school education without the provision of additional support; ^d“Staged Intervention” refers to an approach where there is coordinated support, involving parents, guardians and appropriate professionals for children and young people with Additional Support Needs or specific life circumstances which may compromise their ability to benefit from school education. The nature of staged interventions can vary significantly.

Source: Adapted from GCPH (2015)

Table II Socio-demographic analysis of Big Noise Govanhill after-school programme participation

	<i>All Scottish pupils</i>	<i>Pupils eligible for Big Noise</i>	<i>Big Noise attendees</i>	<i>Former Big Noise attendees</i>	<i>Observations</i>
Pupil numbers	676,955	405	125	113	One third of eligible pupils attend, 28% have attended at some point and 41% have never attended
Pupils living in most deprived Scottish index of multiple deprivation decile	11%	25%	34%	16%	Pupils living in the most deprived postcodes are more likely to attend and less likely to stop attending
Identify as any ethnicity other than "White: Scottish" or "White: British"	15%	87%	68%	92%	Pupils from ethnic minorities are less likely to attend and more likely to stop attending
English is not the main language spoken in pupil's household	6%	77%	61%	86%	Pupils with English as an Additional Language are less likely to attend and more likely to stop attending
Average school attendance	92%	91%	93%	92%	School attendance is higher among attendees and among former attendees
Children with additional support needs (ASN) ^a	20%	40%	39%	61%	Pupils with ASN are slightly less likely to attend and more likely to stop attending

Notes: ^a"Additional Support Needs" refers to when the child or young person is, or is likely to be, unable to benefit from school education without the provision of additional support.

Source: Adapted from GCPH (2015)

Qualitative results

Happiness and enjoyment. Participation in Big Noise in-school and after-school programmes brought children and young people a great deal of happiness and enjoyment. This was repeatedly and explicitly identified by intervention partners and by participants themselves. For younger children, enjoyment primarily stemmed from the act of creating music, including the singing sessions they took part in and the sounds their instruments made when they played, as these children describe:

Researcher : How does it make you feel when you're playing your violin? Is it sometimes frustrating?
Govanhill participant (age 8): Yeah. Sometimes when your hand gets sore. And your finger goes all, and you get sore fingers.

Researcher : How does it make you feel when you get a tune right?

Govanhill participant (age 8): Happy. And joyful.

Researcher: How do you feel when you're at Big Noise?

Raploch participant (age 11): It makes me feel happy, happy like Christmas Eve.

This enjoyment aspect of learning musical skills is prioritised in the design of the Big Noise programme. Staff design sessions to be fun and engaging and delivery is energetic with a balance between learning and enjoyment. This encourages children to enjoy not only the music, but also the process of learning, as this child indicated when drawing things they liked about Big Noise:

Govanhill participant (age 7): *Can I draw [Big Noise musician] at the back? She's a [music] teacher.*

Researcher: *What do you like about her?*

Govanhill participant (age 7): *She always lets us do fun things.*

Researcher: *Like what?*

Govanhill participant (age 7): *She always lets us have a spare minute to play the cello.*

When asked what they did not like about Big Noise, this Govanhill participant (age 7) stated:

I don't really like going home when you have so much fun, you have so much fun you don't want to go home.

And this Raploch participant (age 13), who had since left the programme, noted that:

You get a buzz when you're doing it.

Relating to the described balance between fun and learning, some participants stated that an area for improvement in the programme could be greater discipline. However, overall Big Noise partners were satisfied that these elements were well balanced, as given the disadvantaged demographics of the populations concerned the teaching environment was recognised as often being challenging.

Security, belonging and relationships. The Big Noise after-school programme runs up to four evenings per week during the school term and up to four half days per week during the school holiday. Case study analysis in particular highlighted how the intensive nature of the programme provided a degree of routine and structure to children's time, over and above that offered by school. This was identified as particularly beneficial for vulnerable children with less well-structured home lives.

Moreover, participation in Big Noise was described as offering children a high degree of identity and belonging. This stemmed from the positive and exciting role it played in their lives, as well as smaller details such as strong and colourful Big Noise branded t-shirts worn during performances. For many children, the allocation of their own, personal instrument served to reinforce this sense of belonging to Big Noise:

For a lot of our children, they don't have a lot that's theirs. The fact that they've got this one thing [their instrument] for which they're responsible, it's just their special thing, means a huge amount (Govanhill classroom teacher).

This security and identity was highlighted by a number of partners in Govanhill as being especially important for children who had recently migrated to the country. These children were understood to be experiencing the loss of a familiar environment and way of life.

The relationships that participants were able to build with Big Noise musician tutors over the course of their participation in the programme appears to underpin the sense of belonging and security that the intervention offers:

I think that they really, really know the children really well. They spend a lot of time with the children and they spend their break times with the children. They see them so much here, it's so intensive. Every day they're working with the children and it's a really intensive relationship but I think that they develop with them as a result of that (Big Noise Raploch staff member).

Big Noise delivery partners and participants themselves described how the relationship between musician and participant differed from those formed with classroom teachers at school, having a much less formal feel. Frequently musicians would chat with participants about topics important to them, their lives and aspirations. Big Noise musicians were described as always being supportive and encouraging and willing to offer constructive advice. As well as being a musical educators, musicians were viewed as important role models to participants. This relationship was fostered through the frequency of contact, the personalities of the musicians and their openness towards participants:

[...] they are very warm people. They're very much, for adults, getting very much engaged with the children as an individual. They come to the door and you can see the rapport from the minute they open the door. I feel it's a very, very positive thing for the children, because of the relationship they have with the musicians (Govanhill classroom teacher).

A Big Noise Govanhill participant (age 9) described one of the musicians as follows:

He's kind, he's funny, the favourite teacher of all!

Pride, confidence and self-esteem. Engagement in the intervention, particularly sustained engagement with the after-school programme, provided participants with a significant source of pride. Many participants described how challenging it was to learn to play their instruments, but that mastering these skills – and particularly being able to show them to their friends and family at local performances – was a source of great pride:

Researcher: What are you playing in this drawing?

Big Noise Govanhill participant (age 6): Viola.

Researcher: What does it make you feel like when you're playing it?

Big Noise Govanhill participant (age 6): It makes me feel proud.

Coming to Big Noise is not necessarily fun by other people's standards, but it's to build up your confidence, build up your communication skills, show your talent that you have to express your feelings, or something like that. Usually when, for example, your parents say 'go for it, go for it', that's your parents pushing you to do something that's giving you, I don't know how to put it, giving you more confidence. But in Big Noise it's different, you come to Big Noise, what's pushing you is music, music's pushing you to build up your confidence (Big Noise Raploch participant, age 14).

Increased confidence and self-esteem were seen to be particularly beneficial for children who struggled academically. Musical competence gave these children a feeling of skill in something complex and respected:

[...] not all children are going to do as well academically and if there are other things that can make them feel better about themselves, then that's bound to be a good thing. [...] [Big Noise provides] a voice, that agency. Agency is very important, in terms of emotional development and a sense of competence (Raploch educational psychologist).

Again, this was seen as especially relevant for migrant and minority ethnic children who struggled to learn in an English language environment in Govanhill, as this classroom teacher describes:

[...] music is something that you can participate in which isn't dependent on language and isn't dependent on previous education. It's something that they're all on an equal footing, they're all learning together, they're all participating together [...]. They don't have to be able to speak English to be able to do that, so it's a leveller as well as providing development.

In summary, in the short-term both the in-school and after-school Big Noise programmes provided participants with happiness and enjoyment. For those who engaged more fully, particularly in the after-school programme, these impacts extended to a sense of security and belonging and to feelings of pride and confidence, which improved self-esteem.

Discussion

These findings add to a limited and under-theorised evidence base concerning the targeted use of community-based music programmes, their impacts and potential to address social inequalities. They indicate that participation in Big Noise, a music-based community-level intervention, enhances mental and emotional wellbeing among child and adolescent participants. These findings are consistent with Bungay and Vella-Burrows (2013) assessment of the impacts of arts participation on children and young people. They also mirror those of the GCPH commissioned systematic review of arts participation and attendance on health and wellbeing (GCPH, 2014b), where studies exploring music making's positive impacts to mental and emotional wellbeing generated the most reliable evidence. The full initial evaluation report proposes a range of impact pathways which capture the complexity of the mechanisms at play. The pathways incorporate all of the theoretical underpinnings identified in the systematic review to some degree (including Lemon, 1972; Bourdieu, 1986; Deci and Ryan, 2002; Csikszentmihalyi, 1997). At this early stage in the evaluation it would be premature to prescribe which of these theories is most relevant or influential.

In terms of the specific aspects of the intervention that generated these impacts, music making was found to be a source of happiness, fun and enjoyment, which was re-enforced by the encouraging and supportive characteristics of Big Noise musicians. Furthermore, the challenge and reward of learning complex skills required to play musical instruments has been identified as generating particular benefits for emotional health, notably pride and satisfaction. The opportunities for praise and recognition; to perform as an orchestra ensemble, underpinned the role of the programme in generating confidence and self-esteem. This was identified as particularly important among children and young people of lesser academic ability. However, these findings also highlight that there are challenges in striking the optimum balance between enjoyment and discipline when working with disadvantaged pupils, particularly within challenging educational environments. Moving forward it is also important for Big Noise to take steps to ensure equitable programme engagement and benefits for vulnerable pupils with additional needs, and for minority ethnic and migrant populations.

The relationship between participants and Big Noise musicians was striking and proved pivotal to the impacts identified here. This is important because it underlines how individualised and contextual factors influence programme impacts; the processes in which programmes and

interventions are delivered (and by whom) are important alongside the activity being delivered. Consistent with other social intervention evidence, Sistema Scotland's vision could be described as "people change lives" not services or programmes nor even music (Robinson, 2010). This emphasis on relationship quality is not new. For example, in psychotherapy research, the quality of "therapeutic alliance" between therapist and patient is the most robust predictor of treatment success (Krupnick *et al.*, 2006). The deep social change that Sistema Scotland aspires to achieve within disadvantaged communities is predicated on being a permanent, visible and stable part of community life over the long term and on fostering sustained quality relationships between musician and participant. This approach is coherent with "attachment theory" and the importance that places on consistent, long-term contact between therapist and patient in psychotherapy, especially the treatment of children and young people (Oppenheim, 2011).

Finally, these findings illuminate the relationship between programme impacts and participant needs. That is, not every child or young person who takes part in Big Noise will experience all of these impacts. What they do experience will be relative to the wider contexts of their lives. This is important to bear in mind when conducting quantitative, comparative research (both in the future evaluation of Big Noise and other interventions). Often, interventions seek to achieve large, measurable impacts, observed consistently across participants. This is not necessarily compatible with the nuanced and, in many cases, individual and personal intervention delivery and impacts we have identified within this intervention. Future research requires both quantitative and qualitative methods to better understand how Big Noise, and interventions like it, impact on mental and emotional wellbeing into adulthood and later life.

Strengths and limitations of this study

The data collected as part of the early stages of this study have been primarily qualitative. The methodological approach taken here has enabled the research team to identify and explore the impacts of the programme on mental and emotional wellbeing, as well as a range of other aspects of children and young people's lives. However, it has not enabled an assessment of the prevalence of these impacts among the participating population, nor has it generated an understanding of the duration or degree of engagement required in order to produce these impacts. This would require careful use of mixed methods and a quantitative assessment of impacts. The necessary data are not yet available but will be incorporated into the wider on-going evaluation in future.

Impacts on participant mental health and wellbeing were not assessed using validated measures (such as the Warwick-Edinburgh mental wellbeing score (Tennant *et al.*, 2007)). This decision was taken for cultural reasons (the language and communication encountered within the ethnically diverse population of Govanhill were considerable), questions about the age-applicability of the measures (given the broad age range covered by Big Noise) and a commitment in the study team to seek to capture the complex, nuanced and generative nature of the work (for which grounded, qualitative methods are better designed). While the qualitative methods served the purposes of this study, the lack of validated measures of wellbeing limits the comparability of the impacts of this intervention with that of others.

Next steps

Future plans for the wider evaluation of Big Noise are to seek out and link routinely gathered data on education (qualification attainment, post-school destinations), social care (contact with social care services, duration and nature), justice (involvement in criminality, duration of incarceration), welfare (use of social protection, type of welfare and duration) and health (details of morbidity and mortality, hospital admissions). Outcome data for Big Noise participants will then be compared to those of an identified control group; statistical analysis will examine the size of the Big Noise effect and its influence on these life-course outcomes adjusting for socio-demographic differences between the groups.

This future analysis has been approved by the NHS West of Scotland Research Ethics Committee and will commence in 2020, when it is anticipated the Big Noise participant cohort will

be large enough to analyse the effects of Big Noise participation on educational outcomes. Qualitative work will follow up with participants to establish how deep and persistent the early years impacts identified here have been including variances between sites, gender, ethnicity and level of engagement.

Conclusion

Consistent with previous evidence this formative qualitative evaluation finds that the Big Noise music making programme positively impacts on mental and emotional wellbeing. The study also highlights important challenges for Big Noise in terms of equitable programme engagement among the target population.

More broadly, this study demonstrates that the nature of impacts is influenced by a range of factors including participant circumstances, programme design and the characteristics of programme staff. The study also begins to elucidate how factors such as music making, skills acquisition, the quality of musician/participant relationship and regular musical performances relate to impacts to participant mental and emotional wellbeing.

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