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**Implementation of a Music Program in an Urban Elementary and Middle School Setting to
Improve Behaviors, Increase Social Skills and Self-Esteem Amongst Students with Social
and Emotional Impairments**

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NU 719 DNP Seminar

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Abstract

Background: The prevalence of mental health problems including social and emotional impairments in children and adolescents has increased over the past decade. The increase in the burden of mental health issues among children and adolescents has been noted worldwide as well as the United States.

Local Problem: The large urban elementary and middle school in the northeast region of the United States where the project will be implemented mirrors the national trend of having a large number of students with social, emotional, and behavioral health issues. This site school in particular, has three sub-separate classrooms referred to as the Emotional Impairment Strand (EI Strand). BIMAS (Behavioral Intervention Monitoring Assessment System) scores showed the students in particular in the EI Strand falling into the high risk category in both behaviors and adaptive skills.

Methods: The Alvin Model of Free Improvisation is well suited to guide the development and design of the project implementation. The ability to enjoy music freely using different techniques such as listening, instrument playing, or freely using their voice will be important components of the project intervention. Rapid change PDSA cycles will be used to guide the development, implementation, and evaluation of the project. Lewin's Change Theory Model will inform the change in practice.

Interventions: The intervention chosen for this project is the implementation of a music program for students who are in a cluster-based learning adaptive behavior program which consists of three sub-separate classrooms. A pre and post BIMAS assessment tool will be administered to the students. The music program will be implemented once a week for forty minutes for a total of eight weeks.

Results: This intervention will be evaluated after the eight weeks. Pre and Post BIMAS results will be analyzed.

Implementation of a Music Program in an Urban Elementary and Middle School Setting to Improve Behaviors, Increase Social Skills and Self-Esteem Amongst Students with Social and Emotional Impairments

Introduction

Problem Description

The prevalence of mental health issues including social and emotional impairments of children and adolescents has increased over the past decade and worldwide as well as in the United States (US). Approximately 16.9 million children worldwide have been diagnosed with a mental disorder (Perou, et al. 2013). These children suffer a variety of symptoms including short attention span, difficulty socializing with peers, low self-esteem, dysfunctional family and low frustration thresholds (Ghandour, et al., 2018). From 2012 to 2018 the number of students in the United States receiving mental health services increased from 6.4 vs. 7.1 million, which has significant implications for the needs of children in the school setting. It is estimated that 14% of students currently attending public schools have social, emotional and/or behavioral health issues placing a significant amount of stress on students, teachers and the wider school community (NCES, 2020).

Between 2014 and 2018, the Center for Disease Control (CDC) examined mental health symptoms in four different U.S. school districts and found, based on teacher and parent reports, that approximately 1 in 6 students had behavioral or emotional symptoms and impairments and were diagnosed with a childhood mental disorder (Danielson, et al., 2020). The most common diagnoses identified were anxiety, attention deficit hyperactivity disorder (ADHD), oppositional

defiant disorder (ODD), and obsessive compulsive disorder (OCD). Teachers identified boys, non-Hispanic Black students, and students receiving free or reduced-price lunch as being at higher risk for mental health disorders compared to their peers (Danielson et al., 2020).

Danielson et al., (2020), recommended that schools should screen, identify, and refer children and adolescents to effective treatments to help prevent or lower the adverse effects of childhood mental disorders.

There are many factors associated with the high prevalence of social and emotional impairments. These include issues that are often related to or exacerbated by family poverty, the community in which they live in, and the limited access to healthcare. Many children are living below the federal poverty level. Statistically, 1 in 5 of these children (22%) have a mental, behavioral, or developmental disorder (Department of Elementary and Secondary Education (DESE, 2020). Combined factors of age and poverty level affected the likelihood of children receiving treatment for anxiety, depression, or behavior problems. (DESE, 2020). According to Cree, et al., (2018), the current uptick in the prevalence of these conditions is related to a decrease in diagnosis and treatment due to the shortage of services, barriers to treatment and the inability to address the behavioral health needs at the pediatric primary care office. The prevalence of children not receiving treatment in turn affects the students' ability to learn and can have the effect of disrupting other students learning in the classroom. Negative behaviors are common when the student does not have a sense of safety or belonging. These behaviors are often disruptive to the teacher's ability to teach and the other student's ability to learn.

Local Problem

The large urban elementary and middle school where the project will be implemented mirrors the national trend of having a large number of students with social, emotional, and

behavioral health issues enrolled in the school. The school has 900 enrolled students in grades K-8. Students at the site school come from a large city in the northeast region of the United States. Fifty-four percent of the students are economically disadvantaged, and 81% are deemed high needs (DESE, 2020). High needs signifies the number of students who are in addition to be economically disadvantaged, could also be either an English Language Learner (ELL) or a former ELL student or a student with disabilities.

This site school in particular, has three sub-separate classrooms referred to as the Emotional Impairment Strand (EI Strand). In the 2019 school year, these classrooms comprised a total of 30 students. Twenty-six students out of the thirty students in this specific program, fell in the high risk category on the BIMAS (Behavior Intervention Monitoring Assessment System) in Behavior and Adaptive Skills (Edumetrisis, 2020). The students' BIMAS scores showed no improvement in total score or any areas of the BIMAS assessment. This is crucial as the scores are a telling sign that regardless what segment of the school year it is, whether at the beginning or towards the end, students with social and emotional impairments are in need of an intervention such as a music program, to help them potentially grow socially and emotionally as an individual and a group. Unfortunately, due to the Covid-19 pandemic, the BIMAS tool was not administered for the end of the school year 2020. The lack of improvement in the 2019 scores are indicative of why the project manager researched ways to help with the students social and emotional impairments. The school also has seven classes that are referred to as Inclusion Classes. These classes start at grades K- 5. Each class consists of 20 students per class, with seven students who have Individualized Educational Plans (IEP's). The majority of the IEPs in both the EI Strand and the Inclusion class are for students with diagnoses related to psychological disorders such as ADHD, ODD, and OCD.

Given the number and complexity of students with social/emotional/behavioral health issues/needs at this site school, the school staff are eager to find strategies that will allow the students to be more successful and to improve the overall learning environment in ways that reduce stress, improve mood, and increase engagement of the students.

Teachers, nurses, and staff are not always able to help students regulate themselves or de-escalate their student behaviors. Special education teachers have many responsibilities, and the additional responsibility of needing to be mentally prepared to handle the student's social and emotional needs can be considerable. There is a significant need to provide interventions that improve this situation for both the students and the staff.

Available Knowledge

A systematic literature review was undertaken to find effective interventions to help students improve behaviors and increase social skills and self-esteem. The review concluded that music programs had the strongest evidence base to support the project intervention.

The results of the studies that implemented music therapy revealed a decrease in adverse behaviors and improved social skills and self-esteem at the completion of the intervention (Gooding, 2001, Pasiali & Clark, 2018, Porter, et al., 2017, Uhlig, et al., 2018, & Wood, et al. 2013). Using improvisational music therapy as an intervention was associated with improvement in self-esteem and social skills and decrease in problem behaviors (Porter, et al. 2017, Gooding, 2011). One study used a combination of interventions with implementing music therapy such as: listening to lyrics, improvisation, drumming, musical games, playing instruments, chanting and song discussion (Pasiali & Clark, 2018). Results indicated an improvement in communication, an increase in academic performance and a decrease in problem behaviors. Another study,

implemented Rap and Sing Music Therapy as the intervention and it positively affected the student's self-esteem, emotional regulation, psychological well-being, and self-description (Uhlig, et al.2018). A third study used drumming as an intervention (Wood, et al. 2013). The results showed an increase in self-esteem and a decrease in problem behaviors. The two non-research articles solidified the need for a music therapy program amongst students with social and emotional impairments that lack social skills, self-esteem and adverse behaviors.

Based on the research reviewed amongst all the interventions explored, music showed the strongest results and had the most promising outcomes when considering the most appropriate interventions for this proposed project setting.

Rationale

Among the studies reviewed, The Alvin Model of Free Improvisation was the only model that was explicitly described (Porter, et al. 2017). This model encouraged the students to use improvisation to create music and sound freely through voice, instrument, or movement while receiving support and encouragement tailored to suit their needs as assessed by their music therapist. There are no rules to be imposed, rather the aim is to let the student go freely and allow him/her to find their own way through sequencing of the sound with the goal to self-liberate and establish relationships with the world. This technique is considered effective and useful for children and adolescents who struggle with communication and interpersonal skills, as these are the components required for improvisation (Porter, et al. 2017). The proposed project focuses on children with behavioral and emotional impairments, and the Alvin Model of Free Improvisation is well suited to guide the development and design of the project intervention. The ability to enjoy music freely using different techniques such as listening, instrument playing, or freely using their voice will be important components of the project intervention.

To implement this intervention in the school setting, the theory that was utilized is Kurt Lewin's Change Theory (Langley, 2009). This theory has three stages unfreeze (preparing for the change), change (implementing the change) and refreeze (solidifying the change). (Langley, 2009).

Specific Aims

The aim of this quality improvement project was to implement a music program in an urban elementary and middle school setting to improve behaviors, increase social skills and self-esteem amongst students with social and emotional impairments. In order to achieve this, the specific aims of this quality improvement project were:

1. Perform baseline BIMAS score and enroll at least 12 of the EI Strand students into the music program in September 2021.
2. Of all the students enrolled in the music program, each student will attend the program at least 85% of the time allotted for the 8-week implementation period.
3. After the 8-week implementation period, the students will have a 25% increase in social skills, self-esteem, and decrease adverse behaviors as measured by the BIMAS tool.

Context

The implementation of the project has taken place in an urban elementary and middle school that serves a diverse urban and socioeconomically disadvantaged student body. Many students at the school suffer from emotional and behavioral health issues and some of these students are cohorted together into three sub-separate classrooms referred to as the EI Strand. This current school year, there are a total of 19 students in the EI Strand, ages ranging from 9 -

14, and grades 4-8. This specific strand offers an educational approach tailored to the needs of students with social and emotional issues.

In order to accomplish this, everyone involved in the project recognized the need for change and collaborated with administration to lay the groundwork (*unfreeze stage*). This was done by scheduling a meeting between project stakeholders and administration to introduce the project. The second stage, the *change stage*, is where the plan was developed and implemented. This involved all staff members. Collaborating and communicating the change was vital to implementing the project. Everyone needs to agree and be allowed to voice their opinion in order for the change to happen. The third and final stage was the *refreeze stage*. After implementing the project, the program outcomes will be evaluated for integration into the school day and become a permanent part of the curriculum for the entire school year.

The school environment is outlined in Figure A1 (Appendix A), illustrated the educational microsystem subpopulation of the setting and team members that interact with the student on a daily basis. As noted on the figure, the team players that were most important to this improvement project were the students, parents/guardians, administration, nurse, psychologist, classroom teachers, and music specialist. The most essential players that were involved in the implementation are circled in red. The nurse served as the project director, provided parents and guardians information about the project to engage their interest and support for the music program. School administration supported the project and was the key to the success of the program. Their guidance was essential to developing the schedule that was incorporated into the three classrooms. The nurse, music specialist, classroom teachers, school psychologist, and the program director of the EI Strand were important in developing and implementing this

intervention. Additional staff such as the classroom paraprofessionals and the building specialists were available as support staff as needed during the implementation period.

The students assigned to the EI Strand have been struggling with social and emotional impairments for a long time. In response to the needs of these students, the school district created these sub-separate classrooms eight years ago. Students assigned to the sub-separate classroom have had multiple interventions and were unable to succeed in the regular education classroom due to their social, emotional, and behavioral issues. The classroom has a strict enrollment of no more than ten students with two paraprofessionals and the classroom teacher. Of particular concern is the fact that students in these classrooms display aggressive behaviors and lack social skills and self-esteem. A myriad of factors and concerns are associated with the students' poor social skills, lack of self-esteem, and the adverse behaviors (Figure B1, Appendix B). First, the urban school system has extensive means but the school cannot address all the student's mental health needs. Additionally, some of the students have undergone enormous trauma in their life. Many have never had access to professional mental health counseling because the family has no means to get them to the appointment. Social determinants that contribute to this problem are poverty and drugs and alcohol that have a hand in their environment. Often, the family and community culture do not accept that these issues are real and believe they do not need to be addressed (Wood, et al. 2013). Therefore, the students lack the social skills and self-esteem needed to handle the stressors they encounter. These students are labeled as "at-risk students." This intervention has shown positive results and impacted the student's social skills and self-esteem and reduced the problematic behaviors of students in ways that didn't add extra work to the already overburdened staff and teachers (Wood, et al. 2013). It has changed the student's well-being and the overall classroom environment.

The most important driving force that has supported the program is the fact that everyone wanted the best for these students. The support and collaboration from administration and staff, knowing that the students are suffering exacerbation of their social, emotional, and behavioral impairments due to the unfortunate event of the Covid-19 pandemic, bodes well for the successful implementation. Sharing the benefits and value-added of this project has enticed the school community to support the program.

Intervention

The intervention was an evidence-based music program that was integrated into the curriculum on September 29, 2021, once a week for 40 minutes for a total of 8 weeks for students cohorted in the EI Strand. The goal was to have 12 students enrolled in the program.

Program Planning

In preparing for this project, the Logic Model was constructed (Figure C1, Appendix C) to outline the steps that needed to take place in advance of implementing the project. The steps include the following: (a) obtain buy-in from the staff and administration in advance, (b) plan, collaboration from staff to help the students, (c) initiate communication with administration about the place and time to schedule the music program, (d) evaluate need for funding in order to purchase instruments and equipment along with hiring a music therapist outside of the school building, (e) prepare a grant proposal for the funding needed, (f) develop policies and procedures for the music program and engage administration and staff about how the program will be implemented and evaluated.

After receiving approval from administration about the music program and the commitment to scheduling it during the academic day, the next step was to secure funds which

was done by applying and receiving a music grant for \$2200.00. An outside provider that specializes in music therapy was secured in providing a music therapist for September 2021. Both contracts were signed by the project manager and administration in June 2021.

As part of the routine observational assessment at the beginning of each school year, the teachers complete the students Behavior Intervention Monitoring Assessment System (BIMAS). The BIMAS measurements include *behavior* with subcategories of conduct and negative affect and *adaptive scales* with a subcategory of cognitive attention, social and academic functioning. The teachers sent home the consent form with the students so that the parents can sign and give permission for the teachers to do the assessment. The consents were sent home on September 14, 2021. Along with sending home the BIMAS consent form, there was a permission slip for the students to participate in the music program. After receiving both consent forms, the school psychologist gave access to all the teachers involved in project, the BIMAS tool. The project manager collected all permission slips from the EI coordinator with the consent from the parent allowing their child to participate in the music program. The teachers administered the BIMAS tool on September 28, 2021. The school psychologist scored the BIMAS responses and shared the results with the project manager. The September 28, 2021 BIMAS serves as the baseline assessment of the students' behavior and adaptive skills.

Implementation of the Intervention

The music program was implemented September 29, 2021. All the students' parents agree to have them participate in the music program once a week for 40 minutes for a total of eight weeks during the academic day. Weekly attendance has been taken at all sessions. The music therapist was responsible for this part of the program. The music program was held within the classroom and initially the students sat at their desk. This allowed the music therapist to

assess the dynamics of the class and to see how the students communicated with each other. Every session started with a Hello Song and ended with a Goodbye Song. By the third session, the music therapist had a good sense of the students' maturity level and had the older students arrange their desks in a circular format. For the younger students, the music therapist sat on the rug in a circular format with the students. The theory of using a circular format was to encourage the students to look at each other, obtain eye contact which promoted feeling equal and increased their confidence as the program progressed. All three groups were provided with instruments such as drums, shakers, triangles, headphones, and a recording app called Bandlab that they installed on their chrome books. Using the drum as an example, each student made a beat and continued with each student adding to that beat and this allowed them to get comfortable enough to make a song as the program progressed. The Bandlab allowed the students to record their music. All students were given headphones so they could listen to what they were making and record what they did either with their instrument or with their voice. Taken together, the combination of group interaction and music allowed communication through music.

Evaluation of the Intervention

The Plan-Do-Study-Act (PDSA) theoretical framework was used to develop, implement, and evaluate the improvement project. This method utilized rapid change cycles and interactive cycles to test change or improve ideas and to facilitate continuous evaluation of the intervention and allowed for improvements to be made in real time (Langley et al. 2009). In order to evaluate whether or not the implementation of a music program was effective, the project manager assessed whether or not the specific outcomes of the program were met. This information was gathered by the comparison of the pre and post BIMAS results. The aim of the PDSA framework was to adopt the intervention into the curriculum as a permanent part of the academic schedule.

Measures

The aim of this project was to implement a music program for students in the EI Strand.

Table 1

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Measures Table 1	
Aim or Objective	How operationalize/ measure
Perform the BIMAS test and enroll at least 12 of the EI Strand students into the Music Program in early September.	Pre/Post Results of the BIMAS Tool It is a 34- item Likert Scale-Social Skills Items 1,4,7,11,15,19,23,26,30,33,34 Negative Affect (Self-Esteem) Items 5,8,12,16,20,24,27 Behavior Items 2,9,13,17,21,25,29,31,32 Cognitive/Attention Items 3,6,10,14,18,22,28 Rating 0=Never to 4=Very Often(observed 7 or more times in a week)
Of all the students enrolled in the Music Program, each student will attend the program at least 85% of the time allotted for the 8-week implementation period.	Attendance taken at the weekly music program session
After the 8-week implementation period, the students will have a 25% increase in social skills, self-esteem, and decrease adverse behaviors as measured by BIMAS testing.	BIMAS Tool results compared pre and post the Music Program.

outcome of this project These measures aligned with the project aims, objectives and the expected outcomes and success.

The first aim was to enroll at least 12 students in the EI Strand into the music program in early September 2021 and document the BIMAS pre-implementation assessment. The BIMAS was assessed pre and post the music intervention and it gave a comparison of the before and after of the intervention. This was measured by having a baseline BIMAS score of all the students who participated in music program.

The second aim was that the students enrolled in the music program will participate in and attend at least 85% of the time allotted in the 8-week implementation period. This was measured by attendance at all music sessions.

Lastly, the third aim was to improve social skills and self-esteem and adverse behaviors with an overall 25% improvement in their BIMAS scores related to social skills, self-esteem, and adverse behaviors.

The BIMAS is a measure of behavioral functioning and social and emotional skills in children and adolescents ages pre-k to 18 years (Edumetrisis, 2020). The BIMAS tool is a 34 item universal screening tool routinely used in schools for seamless integration of progress monitoring of behavior and mental health related interventions. (Edumetrisis, 2020). It assists in creating the students individual learning/educational plan. It also has the ability to detect reliable change when interventions are implemented. The areas that were measured by this tool were Behavior Concern Scales with three sub-scales, Conduct, Negative Affect and Cognitive/Attention and Adaptive Scales with two sub-scales of Social and Academic Functioning. The BIMAS tool was scored in two different areas. The first part was the Behavioral Concern Scales. This was categorized by Conduct, Negative Affect and Cognitive/Attention. This measures level of risk/concern. The results were then categorized by a *T*-Score number. There are three categories. High Risk had a *T*-Score of 70+, Some Risk had a *T*-Score number of 60-69, and Low Risk had a *T*-score <60. For the Behavioral Concern Scales, you want the students' scores to be low because this is an indication of how the student is doing in conduct, negative affect, and cognitive/attention. The second area that was measured was the Adaptive Scales. This was categorized into Social and Academic Functioning. This measured positive skill development. For the Adaptive Scales Scores, you want the students' scores to be high. This will give insight into how the student is doing in social and academic functioning areas. There are three categories: Strength had a *T*-Score of 60+, Typical had a *T*-Score number of 41-59, and Concern had a *T*-Score number of < or = to 40 (Edumetrisis, 2020).

Analysis

To analyze the BIMAS tool, you had to first have a mean score of the tool. All BIMAS scores are converted to standard scores (*T*-scores) in order to obtain values that are more easily intelligible. Standard scores are based upon comparisons to the normative sample, which is intended to depict a typical population. Raw scores are converted to *T*-scores, which have a mean score of 50 and a standard deviation of 10. The BIMAS *T*-scores are built on the relationship between an individual's raw scores and typical scores for that individual's age group (Edumetrisis, 2020).

Ethical Considerations

The University of Massachusetts Clinical Quality Improvement Checklist (Figure D1, Appendix D) was completed and demonstrates that the project satisfies all of the required elements for this to be a quality improvement project. The project proposed is quality improvement and does not meet the definition of human subjects research because it is not designed to generate generalizable findings but rather to provide immediate and continuous improvement feedback in the local setting in which the project is carried out. The University of Massachusetts Boston Internal Review Board (IRB) has determined that quality improvement projects do not need to be reviewed by the IRB.

The project was in a large urban elementary and middle school in the northeast region of the United States. The checklist provided (Figure D1, Appendix D) was reviewed with the administration in the school setting and all requirements from IRB were met as this project is a quality improvement project. Because the population that the intervention will be implemented are minors, the required paperwork for consent for the music program along with the BIMAS tool will need to be in place prior to the start of the program as this is the case for all educational

activities and assessments that are done at the school.

Results

The results of the music intervention were favorable. Recruitment was successful as all 19 students approached chose to be enrolled in the music program. 17 out of 19 students participated in the music program. Two were excluded to do severe behaviors, non-compliance and dysregulation. The students were predominantly male. 9 of the students were African American, and 8 were Hispanic. There were only 2 female students in the EI Strand and both were African American. The students ages, grades, and percentages of all their demographics are shown in Table 2.

Table 2-Participants Demographics

Demographics (n=17)			
Ethnicity, n (%)	African American	9	53%
	Hispanic	8	47%
Gender, n (%)	Male	15	88%
	Female	2	11%
Ages, n (%)	Age 9	1	6%
	Age 10	2	12%
	Age 11	5	29%
	Age 12	3	18%
	Age 13	5	29%
	Age 14	1	6%
Grades, n (%)	Grade 4	2	12%
	Grade 5	2	12%
	Grade 6	4	23%
	Grade 7	3	18%
	Grade 8	6	35%

The teachers achieved 100% completion in performing the BIMAS assessment. Student attendance at the weekly music intervention averaged 7 sessions out of the 8 sessions with a range (6-8). This reflects an 88% average for attendance.

At the conclusion of the eight-week program, the teachers did a post BIMAS assessment. The school psychologist scored the results and shared with the project manager. The results of the pre and post assessments scores were compared and results showed that the music intervention was beneficial to the students. Analyzing the results of the Behavioral Concern and Adaptive Scales pre and post implementation of the program, revealed a mean score that indicated that the program has had a positive effect on the students' social skills, self-esteem, behaviors. It was also a good indicator of where the students fell into the category of strength, typical or concern. This was a helpful addition to the mean score results. Comparing the pre and post BIMAS results and the aim for an overall 25% increase in social skills, self-esteem and a decrease in adverse behaviors were met. The percentile change for BIMAS categories are: Conduct decreased 6.9%, Negative Affect decreased 8.2%, Cognitive/ Attention decreased 6.9%, Social increased 6.1%, and Academic Functioning increased 9.2%. The percentile change in the BIMAS scores pre to post intervention indicated that the intervention positively impacted the students' social and emotional impairments.

The project manager achieved all three goals and the results in Figure 1 and Figure 2 show the scores of the pre and post BIMAS.

Figure 1-BIMAS-BEHAVIORAL CONCERN SCALES SCORES:Chart 2:<60= Low Risk, 60-68=Some Risk, >70= High Risk

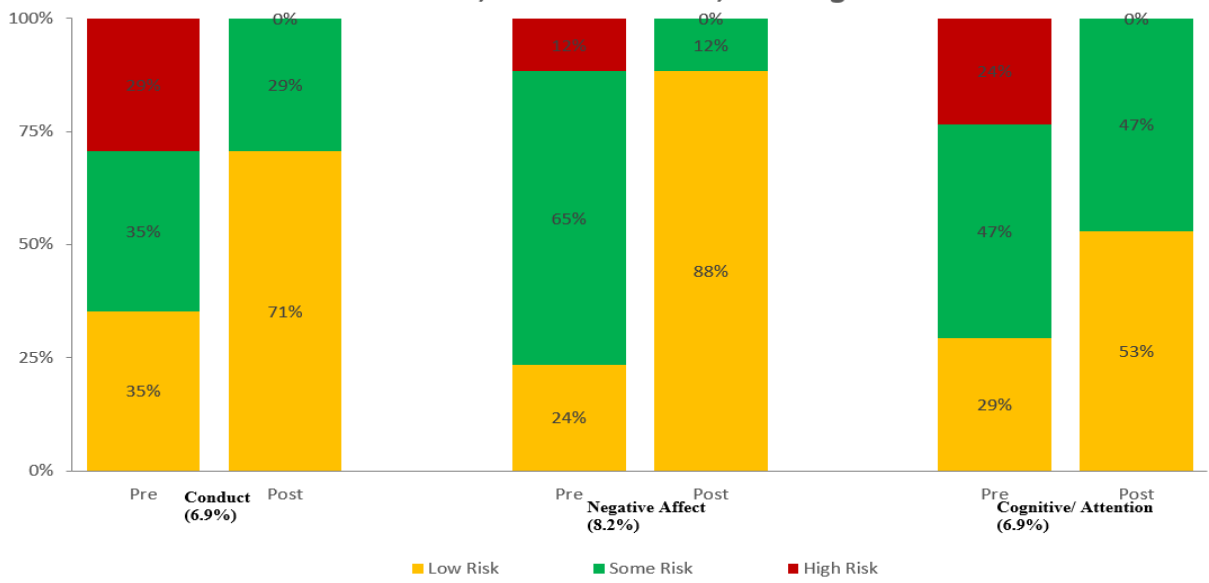
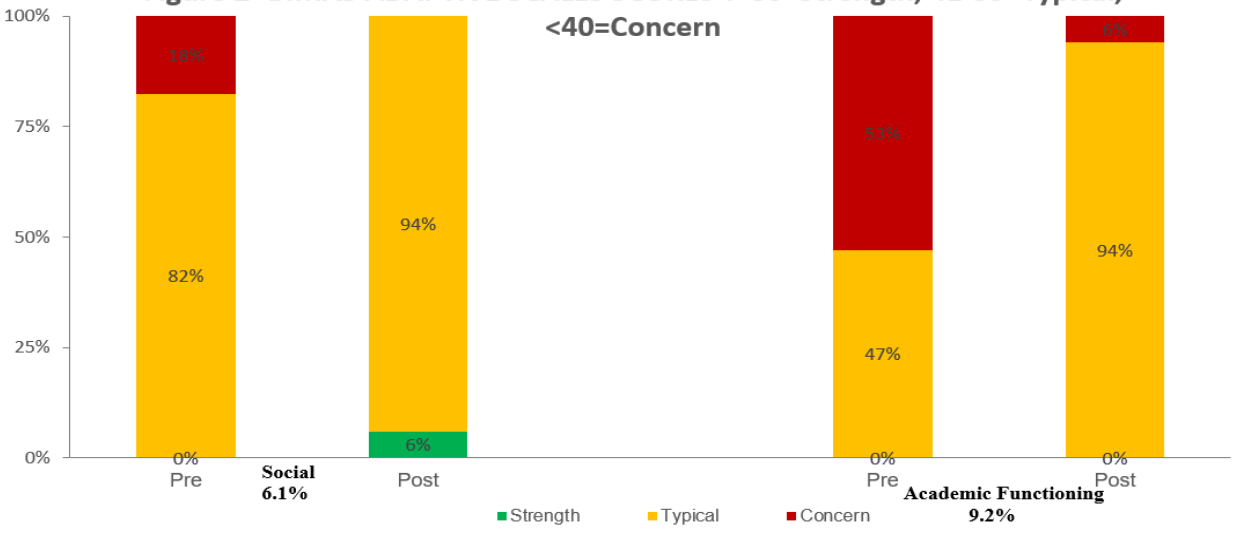


Figure 2- BIMAS ADAPTIVE SCALES SCORES-:>60=Strength, 41-59=Typical, <40=Concern



The overall percentile changes for social skills, self-esteem and adverse behaviors had a total percentage of 28.1%. The 6.1 % increase in Social and 9.2% increase in Academic Functioning pre and post BIMAS scores, was a great indicator of the effects of what Covid-19

had on the students. Being home for almost a year and a half, had a major impact on these students' social skills and academics. As you can see from the pre and post scores of the Social and Academic Functioning Figure 2, in-person learning is an essential element in making progress with students with social and emotional impairments. These scores are very crucial and a telltale sign of what the students were like at the beginning of the school year in all areas of the BIMAS assessment tool.

Upon debriefing with the teachers after the implementation of the music program was done, the teachers reflected that the more sessions that the students participated in, the more confident they became with themselves and this in turn increased their self-esteem and social skills and minimized adverse behaviors. One teacher said that "This music program is awesome and my students love it!" Teachers reported that the students started communicating with others about what they have been doing in the music program and how happy they were to have the program. According to the EI Coordinator, he said "One student in particular said he felt like he did something on his own because he got to record his own music."

Discussion

The BIMAS scores provided evidence that the music program had a positive impact on the students that were targeted for the intervention. All three aims were achieved for the implementation of the 8 weeks of the intervention. As you can see in Figure 1, the improvement in their behaviors was directly a result of the music program. The enjoyment they found and the ability to have something that they called their own was a positive influence on their behaviors. I think the support from the teachers and the students being back at school, having a routine and structure were assets as well to the change in the BIMAS scores. Figure 2, with the pre and post results in the Academic Functioning category, Covid-19 had a huge impact on these students'

academics. The results showed growth in their academic learning through music. These students need routine, structure and positive teachers in their corner. Even though the results showed improvement and growth with an increase in their academic functioning from the BIMAS scores done in September 2021 and then again in December 2021, there is always room for improvement. Continuing the music program next year and possibly adding another day to the EI students, will be beneficial as the BIMAS results will potentially improve even more. The scores are also pertinent to the students overall academic success. The pandemic truly effected all students.

A strength of this program was the use of an experienced music therapist. The music therapist was an incredible asset to the implementation of the music program. She was very seasoned with students with social and emotional impairments. She came in confident and students with social and emotional impairments, greatly need adults like her to give them security and make them feel safe. Every week when she came, the students were engaged, there were no outbursts, fighting, arguments or disruptions during the music class. This was a huge strength to the project and was the icing on the cake to make this intervention triumphant. These students are fragile and have a hard time adapting to new people and situations. Because of the music therapists background and education, the intervention started off promising and continued to the very end. Since the music program had a positive effect on the students in the EI Strand, plans will be made to scale the music program to include the music intervention in other classes in the school. The project manager is recommending keeping this music therapist or someone with the same academic background and expertise in dealing with students with social and emotional impairments. The school also has seven classes that are referred to as Inclusion Classes. These classes start in grade K0 and continue to grade 8. The Inclusion Classes have

many students who have Individualized Educational Plans (IEP's) and many have diagnoses related to psychological disorders such as ADHD, ODD, and OCD. These students would greatly benefit from the music program.

Interpretation

The results of the intervention proved favorable to the students with social and emotional impairments. The findings from the literature review that were conducted before implementing the music intervention provided strong evidence for the intervention. The literature findings all showed either an increase in social skills and self-esteem and a decrease in adverse behaviors. The results of this intervention confirms what the literature review found and the benefits of a music program for students with social and emotional impairments. The results validate the effects of what the music intervention did for students with social and emotional impairments. During the intervention period, their social skills and self-esteem increased and the adverse behaviors decreased. The overall aim of 25% change was achieved!

Limitations

There were some limitations in implementing the music program. First, it consisted mainly of all boys with the exception of two girls. Second, the group was relatively small which could make generalizations difficult. Third, all the participants were either Black or Latino which may have misrepresented the results due to other racial and ethnic populations not being included.

Conclusion

The music implementation indicated the efficacy in treating students with social and emotional impairments. The implementation highlighted the benefits of a music program in a

school with students with social and emotional impairments. It has been beneficial to their self-esteem, social skills and behaviors. It also supported students with their academics. Because this project was successful, the site champion has funded the music program for the whole year and has made it a permanent part of the academic curriculum for school year 2022-2023.

Funding

The music therapist was funded by an outside grant called Katie's Voice. The site school funded the rest of the music program through BPS arts. The music therapist was provided by the Community Music Center of Boston, which already had a contract with the site school.

References

American Music Therapy Association. American Music Therapy Association | American Music Therapy Association (AMTA). (2019). <https://www.musictherapy.org/>.

Centers for Disease Control and Prevention. (2020, June 15). *Data and Statistics on Children's Mental Health*. Centers for Disease Control and Prevention. <https://www.cdc.gov/childrensmentalhealth/data.html>.

Cree RA; Bitsko RH; Robinson LR; Holbrook JR; Danielson ML; Smith C; Kaminski JW; Kenney MK; Peacock G; (2018). *Health Care, Family, and Community Factors Associated with Mental, Behavioral, and Developmental Disorders and Poverty Among Children Aged 2-8 Years - United States, 2016*. MMWR. Morbidity and mortality weekly report. <https://pubmed.ncbi.nlm.nih.gov/30571671/>.

Edumetrisis. (2020). <https://edumetrisis.com/bimas-2>

Emotional and Behavioral Disorders in the Classroom. Education Corner© Online Education, Colleges & K12 Education Guide. (n.d.). <https://www.educationcorner.com/behavioral-disorders-in-the-classroom.html>.

Danielson, M. L., Bitsko, R. H., Holbrook, J. R., Charania, S. N., Claussen, A. H., McKeown, R. E., ... Flory, K. (2020). Community-Based Prevalence of Externalizing and Internalizing Disorders among School-Aged Children and Adolescents in Four Geographically

Dispersed School Districts in the United States. *Child Psychiatry & Human Development*.
<https://doi.org/10.1007/s10578-020-01027-z>

Dingle, G. A., Hodges, J., & Kunde, A. (2016). Tuned In Emotion Regulation Program Using Music Listening: Effectiveness for Adolescents in Educational Settings. *Frontiers in Psychology*, 7. <https://doi.org/10.3389/fpsyg.2016.00859>

Ghandour, R. M., Sherman, L. J., Vladutiu, C. J., Ali, M. M., Lynch, S. E., Bitsko, R. H., & Blumberg, S. J. (2018, October 12). *Prevalence and Treatment of Depression, Anxiety, and Conduct Problems in US Children*. *The Journal of Pediatrics*.
<https://www.sciencedirect.com/science/article/abs/pii/S0022347618312927>.

Gooding, L. F. (2011). The Effect of a Music Therapy Social Skills Training Program on Improving Social Competence in Children and Adolescents with Social Skills Deficits. *Journal of Music Therapy*, 48(4), 440–462. <https://doi.org/10.1093/jmt/48.4.440>

Langley, G. J. (2009). *The improvement guide: a practical approach to enhancing organizational performance*. Jossey-Bass Publishers.

Massachusetts Department of Elementary and Secondary Education. (2020). Massachusetts Department of Elementary and Secondary Education. <http://www.doe.mass.edu/>.

National Center for Education Statistics (NCES) Home page, part of the U.S. Department of Education. National Center for Education Statistics (NCES) Home Page, a part of the U.S. Department of Education. (2020). <https://nces.ed.gov/>.

- Pasiali, V., & Clark, C. (2018). Evaluation of a Music Therapy Social Skills Development Program for Youth with Limited Resources. *Journal of Music Therapy*, 55(3), 280–308. <https://doi.org/10.1093/jmt/thy007>
- Perou, R., Bitsko, R., Blumberg, S., Pastor, P., Ghandour, R., Gfroerer, J., Hedden, S., Crosby, A., Visser, S., Schieve, L., Parks, S., Hall, J., Brody, D., Simile, C., Thompson, W., Baio, J., Avenevoli, S., Kogan, M., Huang, L. (2013). *Mental health surveillance among children--United States, 2005-2011*. MMWR supplements. <https://pubmed.ncbi.nlm.nih.gov/23677130/>.
- Porter, S., McConnell, T., McLaughlin, K., Lynn, F., Cardwell, C., Braiden, H.-J., ... Holmes, V. (2016). Music therapy for children and adolescents with behavioural and emotional problems: a randomised controlled trial. *Journal of Child Psychology and Psychiatry*, 58(5), 586–594. <https://doi.org/10.1111/jcpp.12656>
- Social, Emotional and Behavioral Challenges*. NCLD. (2019, November 21). <https://www.nclld.org/research/state-of-learning-disabilities/social-emotional-and-behavioral-challenges/>.
- Stegemann, T., Geretsegger, M., Phan Quoc, E., Riedl, H., & Smetana, M. (2019). Music Therapy and Other Music-Based Interventions in Pediatric Health Care: An Overview. *Medicines*, 6(1), 25. <https://doi.org/10.3390/medicines6010025>
- Uhlig, S., Jansen, E., & Scherder, E. (2017). "Being a bully isn't very cool...": Rap & Sing Music Therapy for enhanced emotional self-regulation in an adolescent school setting – a

randomized controlled trial. *Psychology of Music*, 46(4), 568–587.

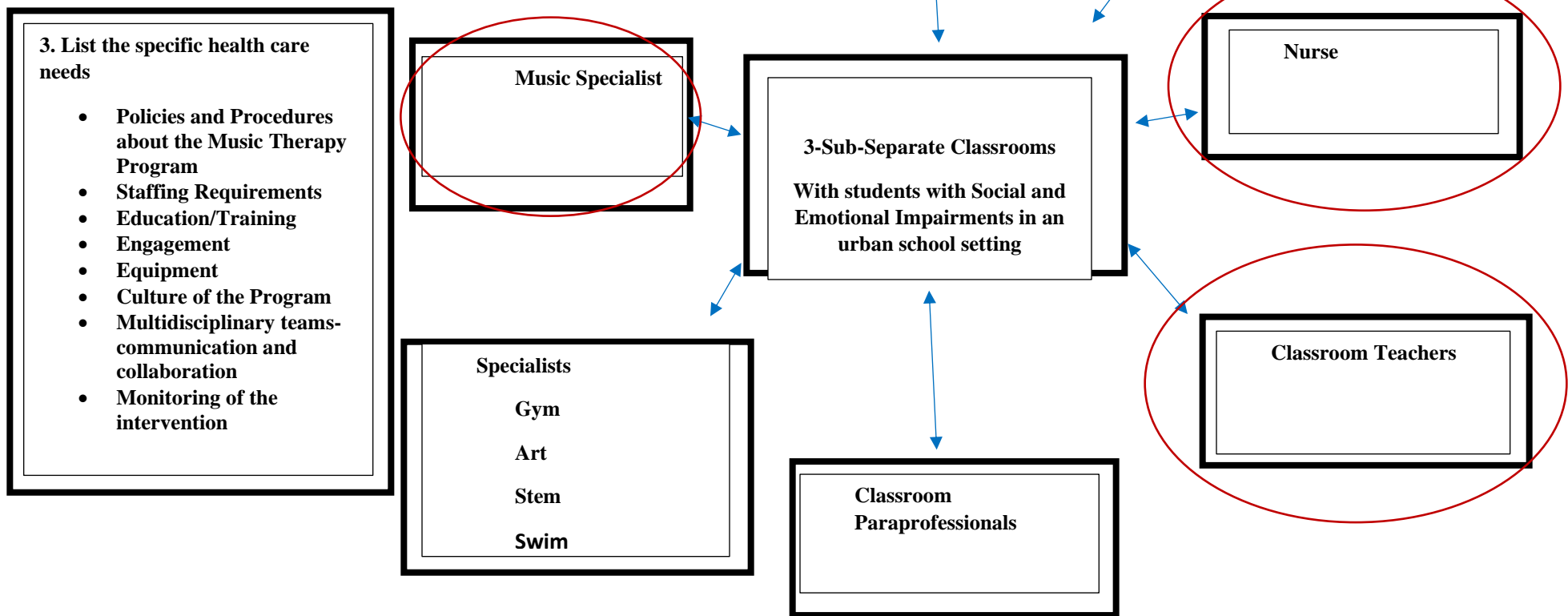
<https://doi.org/10.1177/0305735617719154>

Wood, L., Ivery, P., Donovan, R., & Lambin, E. (2013). "To the beat of a different drum": improving the social and mental wellbeing of at-risk young people through drumming. *Journal of Public Mental Health*, 12(2), 70–79. <https://doi.org/10.1108/jpmh-09-2012-0002>

Appendix A

Figure A1- External Mapping Tool

1. Clinical Microsystem Name: Urban School Setting in Boston
2. Subpopulation of patients: Students in both the elementary and Secondary grades with Social and Emotional Impairments in three sub-separate classrooms

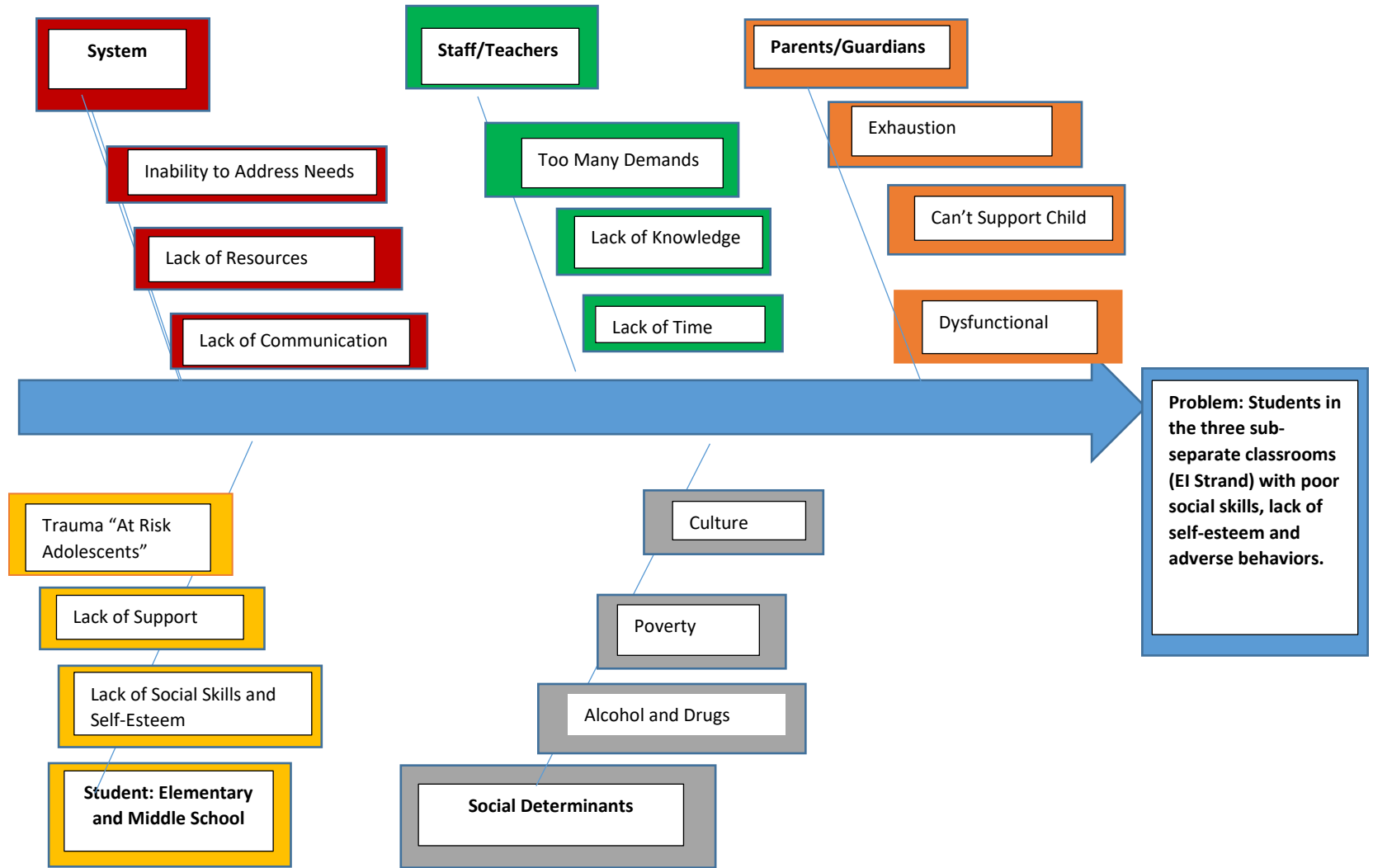


Improvement Ideas: Increase awareness regarding students with social and emotional impairments, education about what the music program is to staff and parents, the benefits of a music program, communication and collaboration before, during, and at the end of the program.

Appendix B

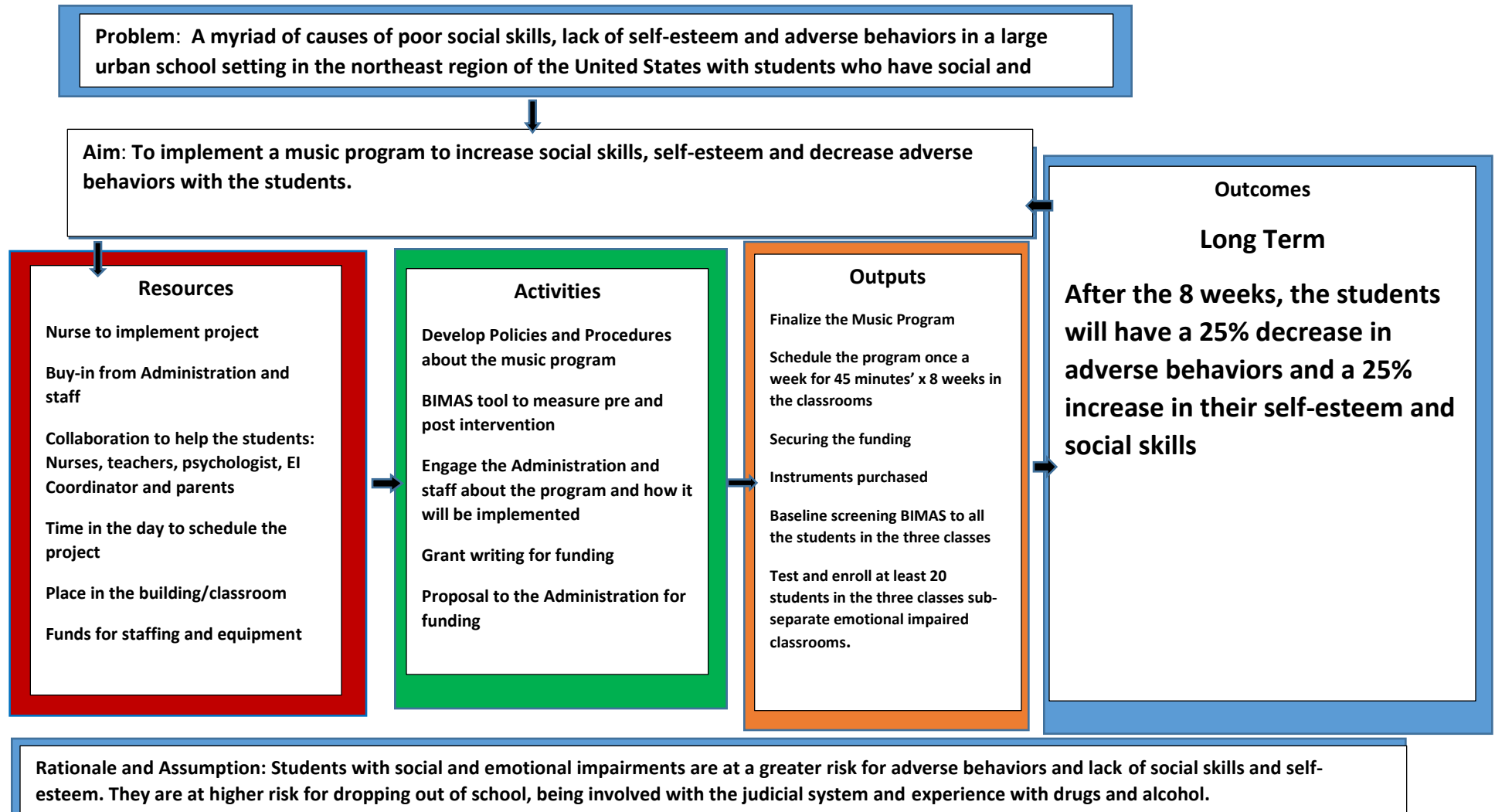
Figure B1- Cause and Effect Diagram

Factors Associated with the social and emotional impairments of the students.



Appendix C

Figure C1- Logic Model: Students in a sub-separate classroom for social and emotional impairments an urban elementary and middle school setting with adverse behaviors and low self-esteem and social skills.



Appendix D

Figure D1-Clinical Quality Checklist

CLINICAL QUALITY IMPROVEMENT CHECKLIST		
Date: March 30, 2021	Project Leader: Denise E Barry	
Project Title: The implementation of a Music Program in three sub-separate classrooms within an urban elementary and middle school setting for students with social and emotional impairments		
Institution where the project will be conducted: Boston Public School		
Instructions: Answer YES or NO to each of the following statements about QI projects.	YES	NO
The specific aim is to improve the process or deliver of care with established/ accepted practice standards, or to implement change according to mandates of the health facilities' Quality Improvement programs. There is no intention of using the data for research purposes.	X	
The project is NOT designed to answer a research question or test a hypothesis and is NOT intended to develop or contribute to generalizable knowledge.		
The project does NOT follow a research design (e.g. hypothesis testing or group comparison [randomization, control groups, prospective comparison groups, cross-sectional, case control]). The project does NOT follow a protocol that over-rides clinical decision-making.	X	
The project involves implementation of established and tested practice standards (evidence based practice) and/or systematic monitoring, assessment or evaluation of the organization to ensure that existing quality standards are being met. The project does NOT develop paradigms or untested methods or new untested standards.	X	
The project involves implementation or care practices and interventions that are consensus-based or evidence-based. The project does NOT seek to test an intervention that is beyond current science and experience.	X	
The project has been discussed with the QA/QI department where the project will be conducted and involves staff who are working at, or patients/clients/individuals who are seen at the facility where the project will be carried out.	X	
The project has NO funding from federal agencies or research-focused organizations, and is not receiving funding for implementation research.	X	
The clinical practice unit (hospital, clinic, division, or care group) agrees that this is a QI project that will be implemented to improve the process or delivery of care.	X	
The project leader/DNP student has discussed and reviewed the checklist with the project Course Faculty. The project leader/DNP student will NOT refer to the project as research in any written or oral presentations or publications.	X	
ANSWER KEY: If the answer to ALL of these questions is YES , the activity can be considered a Clinical Quality Improvement activity that does not meet the definition of human research. UMB IRB review is not required. Keep a dated copy of the checklist in your files. If the answer to ANY of these questions is NO , the project must be submitted to the IRB for review.		