Feasibility of school music trips with safe cohorts during high SARS-CoV-2 incidence rates: a longitudinal observation study

Samipa Pudasaini
Charité – Universitätsmedizin Berlin, corporate member of Freie Universität Berlin and Humboldt-Universität zu Berlin, Emergency and Acute Medicine

Kira Louisa Boldt
Charité – Universitätsmedizin Berlin, corporate member of Freie Universität Berlin and Humboldt-Universität zu Berlin, Emergency and Acute Medicine

Jennifer Hitzek
Charité – Universitätsmedizin Berlin, corporate member of Freie Universität Berlin and Humboldt-Universität zu Berlin, Emergency and Acute Medicine

Linus Möckel
Charité – Universitätsmedizin Berlin, corporate member of Freie Universität Berlin and Humboldt-Universität zu Berlin, Emergency and Acute Medicine

Anna Slagman
Charité – Universitätsmedizin Berlin, corporate member of Freie Universität Berlin and Humboldt-Universität zu Berlin, Emergency and Acute Medicine

Stefanie Theuring
Charité – Universitätsmedizin Berlin, corporate member of Freie Universität Berlin and Humboldt-Universität zu Berlin

Frank Mockenhaupt
Charité – Universitätsmedizin Berlin, corporate member of Freie Universität Berlin and Humboldt-Universität zu Berlin

Martin Möckel (martin.moeckel@charite.de)
Charité – Universitätsmedizin Berlin, corporate member of Freie Universität Berlin and Humboldt-Universität zu Berlin, Emergency and Acute Medicine

Research Article

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Abstract

Background

During the ongoing COVID-19 pandemic, school-related leisure activities were either completely prohibited or only feasible to a limited extent. Especially group musical activities carry a high risk of transmission. Up until now, the question of whether they can be safely re-implemented, has hardly been systematically examined. Therefore, we aimed at investigating the feasibility of school music trips with a hygiene and testing concept in times of high SARS-CoV-2 incidence rates and the Omicron wave.

Methods

We accompanied a one-week school music trip (January 2022). 81 students and 14 teachers of three big bands, mainly from two schools in Berlin, took part. Polymerase chain reaction (PCR) pool tests and a questionnaire before departure as well as a follow-up survey after return were performed. During the trip, a hygiene concept (including daily antigen tests) was applied. Primary endpoint was the occurrence of positive SARS-CoV-2 tests during the study period. The health status before and afterwards as well as the individually perceived fear and risk of a getting a SARS-CoV-2 infection were defined as secondary endpoints. An evaluation of the music trip experience was likewise done.

Results

95 PCR pool tests and 95 survey responses were evaluated from outward journey. 79 follow-up questionnaires were sent in. One positive SARS-CoV-2 pool was detected, containing one positive participant who was excluded from the journey. One student turned positive in antigen-testing (day four), was isolated and sent home after PCR confirmation testing. In both cases, the Omicron variant was detected. After return, a reduction of physical symptoms was visible among students, especially regarding cold signs (p = 0.002, McNemar test). The perceived risk of infection increased in the children's group afterwards (p = 0.019, Wilcoxon rank test). All participants indicated that they want to attend such a music trip again.

Conclusion

School music trips under pandemic conditions are feasible with a hygiene concept and a safe cohort, regardless of the high incidence rates during the Omicron wave. Although we found an increase in perceived risk of infection among students, this did not negatively affect the perception of the trip experience.

Background

Since the beginning of the COVID-19 pandemic, schools had to adapt their daily curricular and extracurricular program in many ways to limit the transmission of SARS-CoV-2 infections. This included a temporary switch to home schooling as well as hygiene restrictions on the daily social interactions in school (1, 2). Based on that, sport events, school and music trips were prohibited or only possible to a limited extent and are, up until today, only feasible depending on the current incidence, the nationwide protective measures, and the school’s resources (2, 3).

Research on the possibilities of facilitating such extracurricular trips during pandemic times are rare and structured guidelines for educational institutions not widely established (4). However, taking into consideration that the pandemic and its associated regulations have resulted in high rates of anxiety, depression, and a series of further mental health issues amongst children and adolescents, a stronger focus on supporting the reestablishment of leisure opportunities appears crucial (4, 5). Their positive effect on children's development was undisputed, also prior to pandemic times (6). The unique and outstanding importance of creative work, like making music, on a child's cognitive performance was, for instance, described in the learning compass 2030 of the Organisation for Economic Co-operation and Development (OECD) (7).

We accompanied a one-week school music trip of two orchestras and two big bands, with a fixed hygiene and testing concept for the very first time in August 2021 (8). With SARS-CoV-2 being a virus that is transmitted primarily via respiratory aerosols, playing music in groups was critically discussed. This refers in particular to the use of wind instruments (9). However, since our study was performed in summer months and at low seven-day-incidence rates (60.7 per 100.000 people in Berlin on departure day) of the then dominating Delta variant (10), its transferability to winter months, with rising incidence numbers and potentially more infectious variants like Omicron, was restricted. Furthermore, the missing occurrence of positive SARS-CoV-2 cases within the travel group during our study period only permitted a cautious conclusion on the effectiveness of the hygiene and testing regime regarding a possible outbreak (8).

Based on that, the need to examine a school music trip with a similar protocol but at a high incidence as well as the (uprising) Omicron wave was given. Our specific aim was to re-evaluate whether such school-related leisure activities are further on realisable, despite the very dynamic changes in the pandemic context, and whether the hygiene concept is safe and effective in preventing a possible transmission in the course of the trip. Also, a direct comparison of similarities and differences in the well-being of the participants during these trip variations was drawn. Here, we specifically focused on evaluating if such an activity, performed under high SARS-CoV-2 incidence rates, may cause deviating effects on the physical and mental health of participants as well as the overall subjective perception of the music trip experience.

Methods
This prospective longitudinal study was performed between the 3rd and 14th of January 2022. The trip itself lasted from the 4th to the 9th of January. On the day of outward journey, the seven-day-incidence rate in Berlin was at 286.8 (10). The exact chronological course of the study is demonstrated in figure (fig.) 1a. Moreover, a flow chart of our first implementation of a school music trip in August 2021 is likewise illustrated here for comparative purposes (see Fig. 1b).

Its method was published in detail by Pudasaini et al. (8). The study protocol was slightly modified for the second journey in January 2022 and will be explained in the following.

**Data acquisition**

86 students and 14 teachers/coaches, coming mainly from two secondary schools in the south-west of Berlin (Steglitz-Zehlendorf) (11), were permanent members of the school-internal big bands and received the offer to take part in our study. One day before travel start, we performed polymerase chain reaction (PCR) pool tests of all participants. During and after the trip, daily antigen tests were done, also as part of the prevailing COVID-19 measures in Berlin schools at that time (12).

Furthermore, written surveys were conducted at the day of the initial testing as well as on the day of return.

An informed consent was needed for study participation but was not necessary for attending the music trip itself. However, the whole travel group was obliged to follow the testing regime and comply with the hygiene concept. This especially implied the consequent use of masks, hand hygiene, distancing as well as playing music mostly in small, fixed groups and housing with not more than two other students per room. Further on, the study cohort did not get in contact with other travellers or locals during the whole journey. The hygiene regulations are provided in detail in the supplement (supp.) 1.

**Data collection and endpoints**

**PCR pool and antigen tests**

PCR pool testing is a common method used in the clinical practice as well as in parts of the German education system (13, 14). The testing took place at one of the participating schools on the day before outward journey (see Fig. 1a). Under close guidance of our medical research team, the students and teachers performed a deep nasopharyngeal self-swab. We created pools of three to five people whose PCR swabs were analysed together in one tube with a COBAS 6800 PCR instrument (Roche, Switzerland) at the university laboratory (Labor Berlin) (15). In case of a positive sample, retesting all members of this specific pool was planned for the same day at our emergency department by performing an individual COBAS LIAT PCR test (Roche, Switzerland) (16) and, thus, identifying the SARS-CoV-2 positive person.

Daily nasal swabs were mandatory during the music trip and, as a follow-up, until five days after the return journey. For that, the participants made use of the Novel Coronavirus 2019-nCoV antigen tests (Hotgen, China) (17).

The primary endpoint was defined as the occurrence of positive SARS-CoV-2 tests during the period of observation, either detected through the PCR pool tests before departure or via the daily antigen tests.

**Questionnaire**

The surveys were performed online via our REDCap data base (18). Prior to that, every participant received a pseudonym and was urged to use the same one for both surveys. With this, we aimed at matching information provided at both time points to analyse dynamic changes in the course of the study. In general, surveys for students and teachers differed slightly.

Age and sex were basic characteristics that we inquired from the whole cohort in the first questionnaire. In the student population, we additionally determined the KIDSCREEN-10 score, a measuring instrument to assess the health-related quality of life in children (19). Further COVID-related information of all participants was gathered, including the vaccination status, mask wearing behaviour (in the school/work environment) as well as the travel behaviour in order to assess the risk profile. In both questionnaires, we collected data about whether participants had contact to people who were recently tested positive for SARS-CoV-2. Moreover, we extracted data about occurring physical symptoms, likewise in both surveys. This included a catalogue of twelve COVID associated symptoms. An evaluation of the psychological state of our participants was done by applying the self-reported GAD-7 (generalised anxiety disorder) questionnaire for the assessment of anxiety symptoms. Sub-categories of the score are presented in Table 3 (20). Also, all participants were asked to estimate their subjectively perceived risk as well as fear of getting a SARS-CoV-2 infection before and after the trip. For evaluation purposes, we requested the whole cohort to inform us about their personal perception of this music trip (open question) and about whether they would decide to participate again under similar hygiene and testing rules.

Variables that were assessed as part of the questionnaire were defined as secondary endpoints by applying an explorative approach.

**Statistical analysis**

A descriptive analysis was applied for the evaluation of basic characteristics. Results of the descriptive analysis were presented for categorical variables in form of likelihood estimations, together with the 95%-confidence intervals (CI, noted as follows: [lower estimate; upper estimate]). For metric variables, the mean value (M) and 95%-CI were reported. Here, we extracted all survey responses that were filled in completely (n = 95 for departure and n = 79 for return, see Fig. 1a). Analysis of the KIDSCREEN-10 was performed by following the standard protocol of the "KIDSCREEN Group Europe" handbook (19). Threshold values for categorisation of the health-related quality of life (low/normal/high) are results of deviations from the mean value, plus or minus half of a standard deviation (M = 50, SD = 10).
When performing a comparative analysis of data from before and after the trip, we solely included questionnaires where a clear match of outward and inward survey response was possible with the help of the pseudonyms distributed (n = 67). This was implemented for the following variables: all physical symptoms, anxiety symptoms (GAD-7 score), individually perceived risk as well as fear of getting infected with SARS-CoV-2. Here, a McNemar or Wilcoxon rank test was applied for analysis.

For both, descriptive and statistical analysis, we made use of the IBM SPSS Statistics Version 26 software. A p-value of < 0.05 was defined as statistically significant. The evaluation of open questions was done via qualitative content analysis.

## Results

Out of 100 possible participants, 95 (81 students and 14 teachers) initially agreed to take part and underwent the PCR pool testing procedure one day before departure or performed a private PCR test as it was the case for one teacher. Two people declined to participate at both, the study and the trip, while two were excluded as they were in isolation due to a recent positive test. One student did not attend the PCR test because of a non-COVID-related health reason (see Fig. 1a).

### PCR pool testing and antigen tests

In the course of our study, we detected two positive SARS-CoV-2 tests. The first person was detected via a positive pool, which was followed by a COBAS LIAT PCR test for specific identification (see Fig. 1a). That student was excluded from the trip and sent into isolation. The second positive test was discovered on day four with an antigen test as part of the daily testing protocol during the music trip. To confirm this, an additional PCR test was performed and, simultaneously, the student was isolated in a separate hostel room and picked up early. A virus variant analysis was done which detected Omicron in both cases. However, until the end of our observation period, no one else in the travel group was also infected, neither as a consequence of the two positive cases in our study group nor after having had contact to positive tested (external) people before and/or after the trip. In the course of our trip, another student was isolated and sent home early as this person found out about having had intensive SARS-CoV-2 contact in the days immediately prior to the journey (see Fig. 1a). However, he himself did not turn positive until the end of our study period.

A follow-up via telephone was done with the student that tested positive during the trip which revealed as possible source of infection a contact with an external person who was not part of our journey group, two days before the begin of our study period.

### Evaluation of the questionnaire

All 95 participants who attended the initial PCR pool test, also filled in the first questionnaire. After the trip, we received 79 follow-up survey responses (see Fig. 1a).

Participating teachers either worked in the specific schools or were self-employed instrumental teachers. In both cases, they were permanent members of the three big bands. The average age in our student cohort was 14.1 years [13;14] while the distribution of sex was 41.3% for females (33/80) [30;52], 57.5% for males (46/80) [47;68] and 1.3% for diverse individuals (1/80) [1;3]. Based on our calculations of the KIDSCREEN-10, 28.4% (23/81) [19;39] of the students reported a low health-related quality of life, 32.1% (26/81) [22;43] a normal one and 39.5% (32/81) [29;51] fell in the category high. Data about the age of participating teachers was collected in four categories, as demonstrated in table (tab.) 1, with half of them (7/14) [23;77] being ≤ 30 years old. Among the teaching personnel, 21.4% (3/14) [0;44] reported being female and 78.6% (11/14) [59;100] male.

An assessment of our cohort's SARS-CoV-2 risk profile was performed. In this context over 90% of the students stated they wore their face masks inside the school building, more precisely in the classes (98.9%, 80/81 [96;101]) and hallways (93.8%, 76/81 [88;99]), while 85.7% (12/14) [67;105] of the teachers reported doing so. Regarding the SARS-CoV-2 vaccination status, 85.7% (12/14) [67;105] of the teachers had already received their third jab. 67.9% (55/81) [58;78] of the students stated having had two vaccine shots and 12.3% (10/81) [5;20] of them also reported having received the booster (see Table 1).

Additionally, in the student group, 5% (4/80) [0.1;9] had a positive PCR finding and 1.3% (1/81) [1;3] a positive antigen test in the past. Also, we requested the participants to report whether they returned from a foreign country in the four weeks before start of the study. This was confirmed by 8.6% (7/81) [2;15] in the student and 7.1% (1/14) [7;21] in the teacher cohort. In total, 9.9% (8/81) [3;16] of the children stated that they had contact to a SARS-CoV-2 positive person within the 14 days prior to the study period (outside of the school setting) while no reports of such kind were made amongst teachers. After returning from the trip, more than one third (31.3%, 21/67) [20;43] of the students and 50% (5/10) [17;83] of the teachers stated that they had a category-one SARS-CoV-2 contact inside the travel group in the previous five days. These contacts came about through the one student that was tested positive after four days of trip participation.

Moreover, we compared physical symptoms in our study population from data before and after the school music trip. As demonstrated in Table 2, signs of cough, headache, exhaustion, limb pain and sore throat slightly increased during the trip. However, symptoms of a cold were reported significantly less often than before attending the journey (p = 0.002, McNemar test). In the group of teachers, the overall level of reported symptoms was low during the whole study period with a maximum of two (22.2%, 2/9) [7;51] symptomatic people at departure and only one (11.1%, 1/9) [11;33] after return.

Our GAD-7 score analysis revealed a slight increase in anxiety symptoms when comparing the status before with that after journey participation (M = 0.29, SD = 0.53). In detail, reporting of anxiety increased for ten (18.1%, 10/55) [8;28] students while the score decreased for six (10.9%, 6/55) [3;19] and stayed constant for 39 (70.9%, 39/55) [59;83] children (see Table 3). Whereas in the group of teachers, a decrease in anxiety symptoms was visible with three reporting less fear (33.3%, 3/9) [1;66], six (66.6%, 6/9) [34;99] keeping the same level and no one presenting with an increased level of anxiety after the music trip. Distribution of absolute numbers for each category, from non-existent till severe anxiety symptoms, are reported in Table 3.
The analysis of individually perceived risk and fear of getting infected with SARS-CoV-2 amongst teachers showed no prominent alteration after participation (see Table 3). However, increasing rates regarding the fear of infection were registered in the group of children. In terms of the subjectively perceived risk of infection, the detected rise in the student cohort was statistically significant (p = 0.019, Wilcoxon rank test) with 18 children (31.0%, 18/58) [19;43] reporting a higher infection risk in our follow-up survey that before attending the trip (see Table 3).

After returning, 59.7% (37/62) [47;62] of the students and 36.4% (4/11) [7;66] of the teachers described no relevant differences in the music trip experience compared to prior journeys. Of the alterations that were mentioned by the study population, constant hygiene measures (teachers: n = 4, students: n = 11) and restrictions concerning the framework program (students: n = 7) were listed most often. Details about the analysis of this open-question-section can be seen in Fig. 2. Overall, the whole study population (teachers: 11/11; children: 68/68) agreed on wanting to participate in such a music trip again.

**Discussion**

In our longitudinal observation study, we accompanied a one-week school music trip in January 2022 with the objective of examining the feasibility of such school-related activities, this time during high SARS-CoV-2 incidence rates and the rapidly upsurging Omicron variant. We compared the results with an earlier investigation, performed in summer 2021 (8). With high compliance as an elementary requirement, our structured hygiene and testing concept could serve as an orientation guideline for possibly every future cohort when wanting to safely realise such music trips.

In contrast to the first school music trip we evaluated in August 2021 (8), two positive SARS-CoV-2 findings were observed in the January cohort. Taking into consideration that both cases were detected independently from one another and did not cause any further infections in our study group (also in the follow-up period five days after return), our study strongly underlines the effectiveness of the hygiene and testing concept and proves that preventing transmissions within the travel group is possible. The PCR pool tests allowed an early and efficient identification of a student that was until then not detected as positive via the self-tests that were back then obligatory in Berlin schools (12). Moreover, also the daily antigen tests during the trip have proven to be a measure of high relevance but low threshold that allowed a fast isolation of the source of infection.

A protective factor that might have reduced the SARS-CoV-2 risk profile in our cohort from the beginning on was the high vaccination rate. Considering that especially teachers are a common infection source in the school setting, the immunisation of this cohort was highly relevant (21–23). Furthermore, studies have shown that adolescents have a transmission risk that is comparable to that of adults (21). Taking into account that the mean age among students was 14 years, a high vaccination rate in this age group can also be interpreted as a relevant protection factor. Also, the high rates concerning the usage of masks before and during the trip as well as reduced travelling during the preceding Christmas vacations, right before the beginning of our study, may have decreased the initial risk profile. The isolation from locals or other visitors in the hostel was part of the hygiene concept and possibly served as an additional protective factor. However, in contrast to the summer trip (8), the higher occurrence of contacts with SARS-CoV-2 positive people contributed to an increase in the risk profile of our January cohort. As part of the hygiene concept, the participants were urged to stay away from crowds between PCR testing and the departure, dated one day afterwards. Encouraging students and teachers to restrict their contacts also during the five days before PCR testing, in the sense of a "quarantine light", could contribute to a higher informative value of the PCR pool test and reduce the risk of a positive finding during the trip. If aimed so, it must be kept in mind that isolation possibilities depend on the socioeconomic stratum (24); a factor that was not investigated in our cohort but could be of interest in future implementations. But in general, concluding from our study, it needs to be emphasised that a consequent testing regime is, above all, the most effective tool for the successful implementation of a school music trip through the early identification of positive cases. This way, possible infection chains can be prohibited despite the occurrence of SARS-CoV-2 contacts and/or the lack of isolation possibilities prior to the trip.

As a further point, making music outside to reduce the transmission risk when using wind instruments was not possible due to the weather conditions. Instead, the rules concerning regular intermittent ventilation and distancing (see supp. 1) also turned out to be effective in the case of this cohort, as our positive tested student, who played the trumpet, did not infect his co-musicians.

Differing from our first music trip (8), the analysis of reported physical symptoms amongst children did not show a unilateral but rather varying course, depending on the specific symptom, with cold signs even decreasing after attendance. This may be a further consequence of strictly adhering to the hygiene regulations but, in the synopsis of our first trip (8), could also show a certain independence from our measures as the symptom profile does not explicitly need to be a result of respiratory infections. In general, it must be kept in mind that higher frequencies of respiratory illnesses are not uncommon among musicians using wind instruments (25), which applies to 62 of our participants, and could also be observed in future cohorts.

Results concerning the slight rise in the anxiety score and the fear as well as perceived risk of infection after participation indicate partly opposing effects in our January trip, in contrast to our summer cohort (8). It appears possible that this development may have occurred due to the positive tested student during the trip as his first positive antigen result was detected on the fourth day of journey. Until then, he had contact with the majority of the travel group, although almost always with mask. This may indicate that an implementation in summer months, when SARS-CoV-2 infections are less frequent, may be more beneficial regarding mental health issues like fear and anxiety. However, scores evaluating symptoms of depression and social isolation would have been needed to capture a more extensive view on the psychological status after trip attendance as prior studies have shown a strong association between these three (anxiety, depression, social isolation) in children when analysing their mental state during the pandemic (26). Also, concrete reasons for the increase in fear of infection or anxiety have not been inquired in our survey. Therefore, no statement can be made concerning possible confounders. Generally, however, it can be assumed that such music trips are perceived as a positive experience, less depending on the occurrence of infections. This assumption may be drawn from the identical feedback that was given to us, in both summer (8) and winter cohorts, concerning the wish of further participation also in the future. Simultaneously, it must be kept in mind here that a bias in these variables, resulting from the loss to follow-up rate, cannot be fully ruled out.

Overall, the observed changes in physical and psychological symptoms were primarily seen among students while the teaching staff did not show similar alterations after participation. This could be explained by the more confined living conditions amongst children during the trip who shared one room with up to
two other children, in contrast to teachers who had an own chamber. Also, teaching personnel was primarily responsible for didactic-organisational tasks and e.g., did not play (wind) instruments. Both aspects may have made it easier to consequently keep on the mask and reduce possible category-one contacts. This could have resulted in lower anxiety rates and fear of infection, compared to the student cohort.

Moreover, we demonstrated in our study that the on-site feasibility is possible also with (non-medical) regular teaching personnel overseeing the hygiene and testing compliance. However, direct contact with medically experienced staff (i.e., students) throughout the music trip may be helpful for future cohorts.

Further on, we reduced our testing concept for this journey. Unlike in our summer music trip (8), we did not perform a follow-up PCR test five days after return but replaced it by daily antigen tests solely. Only in case of an accumulation of SARS-CoV-2 positive findings in our travel group, an additional PCR pool testing would have been done. This change in our testing regime was possible because all students and teachers were obliged to perform daily antigen tests to attend class after vacation anyway (12), making it unlikely that a SARS-CoV-2 infected person of our travel group would not have been detected during the days after return. Taking into account that the availability of PCR tests can be limited during high virus incidences (27), a regular adaptation of the hygiene and testing protocol to the current pandemic framework seems inevitable. Nevertheless, because antigen tests further loose sensitivity in vaccinated populations (28), PCR-screening will remain the reference standard whenever feasible.

**Conclusion**

In conclusion, our study demonstrates that the successful implementation of a school music trip is also possible during high virus incidence rates and under dominance of the Omicron variant. Also, our hygiene and testing concept proved to be highly effective in preventing the spread of SARS-CoV-2 in case of an infected participant. Resulting from the occurrence of positive cases before and during the journey, an increase in perceived risk of infection amongst children was visible but did presumably not negatively affect the overall positive music trip experience, according to the whole cohort. Future cohorts with higher participant numbers will be needed to further verify and/or adapt this concept.

**Abbreviations**

BECOSS: Berlin Corona School study; CI: confidence interval; fig.: figure; GAD-7 score: generalised anxiety disorder 7 score; M: mean value; OECD: Organisation for Economic Co-operation and Development; PCR: polymerase chain reaction; SD: standard deviation; sup.: supplement; tab.: table.

**Declarations**

**Ethics approval and consent to participate**

This was implemented as a sub study of BECOSS (Berlin Corona School Study), which has been approved by the Ethics Committee of Charité – Universitätsmedizin Berlin (EA2/091/20). All methods were carried out in accordance with relevant guidelines and regulations. Written informed consent was obtained from all participants. In case students were minors (under 18 years old), written informed consent was obtained from their parent and/or legal guardian.

**Consent for publication**

Not applicable.

**Availability of data and materials**

The datasets used and analysed during the current study are available from the corresponding author and/or the first author via e-mail (martin.moeckel@charite.de or samipa.pudasaini@charite.de) upon reasonable request.

**Competing interests**

The authors declare that they have no competing interests.

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Authors’ contributions

MM and FM conceptualised the hygiene concept and study protocol. FM and ST were responsible for creating and providing the questionnaire. JH, SP, MM, LM and KB were involved in data acquisition. Data collection was done by SP, MM and KB. SP and MM analysed the data. SP, MM and KB created the manuscript. All authors had full access to the data, critically interpreted and revised it and approved the final version.

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Authors’ information

1Charité – Universitätsmedizin Berlin, corporate member of Freie Universität Berlin and Humboldt-Universität zu Berlin, Emergency and Acute Medicine, Campus Mitte and Virchow, Charitéplatz 1, 10117 Berlin

2Charité – Universitätsmedizin Berlin, corporate member of Freie Universität Berlin and Humboldt-Universität zu Berlin, Institute of Tropical Medicine and International Health, Augustenburger Platz 1, 13353 Berlin

References


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<td>During work</td>
<td>n.a.</td>
<td>85.7 (12/14), [67;105]</td>
</tr>
<tr>
<td></td>
<td>During breaks/in the school yard</td>
<td>46.9 (38/81), [36;58]</td>
<td>71.4 (10/14), [47;96]</td>
</tr>
<tr>
<td></td>
<td>On the way to school/work</td>
<td>49.4 (40/81), [38;61]</td>
<td>57.1 (8/14), [30;84]</td>
</tr>
<tr>
<td>SARS-CoV-2 based data</td>
<td><strong>Vaccination status</strong> in % (absolute number)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Second vaccination received</td>
<td>67.9 (55/81), [58;78]</td>
<td>n.s.</td>
</tr>
<tr>
<td></td>
<td>Third vaccination received</td>
<td>12.3 (10/81), [5;20]</td>
<td>85.7 (12/14), [67;105]</td>
</tr>
<tr>
<td>Travel behaviour</td>
<td><strong>Contacts to SARS-CoV-2 positive cases</strong> in % (absolute number)</td>
<td></td>
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<td></td>
<td>Return from abroad in the last 4 weeks</td>
<td>8.6 (7/81), [2;15]</td>
<td>7.1 (1/14), [-7;21]</td>
</tr>
<tr>
<td></td>
<td>At outward journey</td>
<td>9.9 (8/81), [3;16]&lt;sup&gt;**&lt;/sup&gt;</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>At return journey</td>
<td>6.0 (4/67), [0.2;11]&lt;sup&gt;***&lt;/sup&gt;</td>
<td>11.1 (1/9), [-11;33]&lt;sup&gt;***&lt;/sup&gt;</td>
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<tr>
<td></td>
<td></td>
<td>31.3 (21/67), [20;43]&lt;sup&gt;****&lt;/sup&gt;</td>
<td>50.0 (5/10), [17;83]&lt;sup&gt;****&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

Table 1: Basic characteristics, the KIDSCREEN-10 score for children, information on school/work environment and SARS-CoV-2 related data.
Physical symptoms of students and teachers before and after the trip.

Absolute and percentage frequency as well as the 95%-confidence interval (CI) are reported; * multiple answers were possible; variations in survey answers occur due to incomplete data provided by participants.
Table 3: Mental health of students and teachers before and after the trip.

Absolute and percentage frequency as well as the 95%-confidence interval (CI) are reported; * variations in survey answers occur due to incomplete data provided by participants. Anxiety symptoms were analysed by using the generalised anxiety disorder (GAD-7) score. Data on the following sub-categories were collected: a) nervousness, b) inability to stop worrying, c) worrying too much, d) having trouble relaxing, e) restlessness, f) easily annoyable/irritable and g) fear as if something awful could happen (20). Also, the subjectively perceived risk of SARS-CoV-2 infection as well as fear of infection was evaluated.

Figures

Figure 1
Study protocols from both music trips; a) January 2022 and b) August 2021(8).

*Person A, B and C lived in the same room during the trip.

Figure 2
Answers from open-question section concerning changes in the journey experience compared to (pre-pandemic) music trips.
Supplementary Files

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- Supplement1.docx