

Xianggong ('Fragrant' Qigong) for the Health of School Children: A Qualitative Pilot Study of Feasibility and Effects

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Abstract

Background: Increasing stress and competitiveness levels in schools require the integration of stress-reducing and relaxing techniques into lessons. Xianggong, a special form of the Asian movement technique qigong, appears suitable for classroom settings. This pilot study explores for the first time the workability and effects of Xianggong as regular exercise by school children.

Methods: In three elementary schools and one high school, one class each practised Xianggong for six months. Two Xianggong teachers instructed the schoolteachers in Xianggong levels one and two for eight weeks (8 x 90 min) each. Then the children started to practise Xianggong for at least two sessions/week during regular classes, initially instructed by the Xianggong teachers and later by their teachers. A classroom session took 15 (level one) to 25 (level two) minutes. After six months, the teachers reported the effects in semi-structured interviews that were systematically analysed using methods by Legewie and Mayring.

Results: In observation of 140 children who exercised four times/week (average), the interviewed teachers reported calming, energising, "harmonising" and reduced aggression, community experience, and improved vitality and health. The only negative effects were temporary nightmares. The teachers found the integration workable. Some issues were problematic: parents' concerns about religious indoctrination, excessively easy exercises leading to lack of concentration, and limited time for exercise during lessons.

Conclusions: The observed benefits warrant further research. Implementation issues can easily be overcome using test programs for further investigation. Qigong, especially Xianggong, may become a useful resource in school health programs.

Background

In many Western societies, primary and secondary school students are increasingly exposed to stress. High unemployment rates and tight job markets, for example, are placing increasing pressure on high school students to achieve good final exam grades. Most students feel unduly burdened by the increasingly competitive nature of high school education¹. Other causes for student stress may be found in high unemployment rates with consequent psychological tension in their families, and increasing poverty of families.

The World Health Organization (WHO) has recognised the significance of this issue and has recommended preventive measures in their guidelines on children's health². School health programmes need to incorporate measures that prevent stress-related problems of all sorts - physical, social, psychological and academic. The ideal solution would be the integration of stress-reducing and relaxation techniques into the curricula.

Which methods are effective and suitable for school children? The interest in complementary medicine, including forms of Asian relaxation methods, is increasing in the Western world³. Such techniques no longer appear exotic and should be tested alongside

Western methods such as self-hypnosis or controlled breathing.

Qigong constitutes, together with diet, herbal medicine and acupuncture, an important component of traditional Chinese medicine⁴. It has traditionally been used to prevent disease and improve health in China⁵. Like many other Asian health-preserving or healing systems, it is based on the concept of vital 'energy' (qi, xi, chi), the amount and flow of which is influenced by various techniques, among them movements, mental exercises and controlled breathing. These have been taught and developed in several different tradition lines, some of them religious. However, these techniques are by no means part of the religion and can be practised in any social body regardless of its religious orientation, much like the techniques of herbal medicine or brewing that have spread from Western monasteries.

In the present project, a special form of qigong was used: Xianggong ('fragrance' or 'fragrant' qigong); participants simply used to call it 'qigong'. Xianggong originates from the Buddhist tradition; it was developed by the monk Xuang Zhang during the Tang-Dynasty (618-906 AD)⁶. For several centuries it was kept clandestine until, as late as 1988, it was presented to the public. Most other forms of qigong

visualise energy flow as part of the practice, whereas Xianggong relies solely on movements. Their names are mnemonics for the motions, e.g. "to row on the sea" or "cross swinging of the arms". (For some introductory information see the website of the Qigong Association of America, www.qi.org/forms.htm; the movements of Xianggong level one are described in detail on page www.qi.org/fragrant/fragdo.html.)

A small number of teachers have already integrated qigong into their school lessons⁷ but to date there has been no systematic evaluation of the effects of qigong on the social behaviour of school children. We therefore investigated in a pilot study the effectiveness of Xianggong when integrated into a regular school curriculum. In four schools we observed the effects in one class each, additionally compared to parallel classes in two of the schools. The quantitative part of the evaluation⁸ measured, through questionnaires for students, parents and teachers, the effects on behaviour, school grades, missing days, quality of life and health issues. Additionally a qualitative investigation of the study was performed to find other effects that might not have been visible through the quantitative instruments (research is very young in this area), and to provide insights into circumstance and organisational feasibility. The qualitative part consisted of semi-standardised interviews with the teachers and is described below.

Methods

Project design and Xianggong lessons

Xianggong exercises were conducted in four Berlin schools, three elementary (2nd grade, age 10-11 years) and one high school (8th grade, 16-17 years). One class per school (20 to 30 students) received Xianggong lessons for a period of six months. Thereafter, feasibility and effects were assessed through semi-standardised interviews with the participating teachers.

Xianggong is taught at three levels of exercises of which this project covered levels one and two. Level one consists of 15 different upper-body exercises, each to be repeated 20 times, while level two includes upper and lower body movements.

The schoolteachers were trained for eight weeks (8 x 90 minutes, with additional home training encouraged) by two experienced professional Xianggong instructors ('supervisors', one of them KB) prior to the start of the project. This training comprised level one exercises. At the start of the project, these were taught to the school children, while the teachers started to learn level two for another eight weeks. Initially, the supervisors directed the children's exercise sessions in class. The schoolteachers attended all of these sessions and took over after a few weeks. Further in-class instruction from the supervisor was provided at least twice weekly during the entire project. The children's Xianggong exercises took place at

least twice a week either at the beginning or the end of regular school lessons. Additionally, teachers motivated the children to do further training at home.

The lessons were performed as described by Kubiena⁹. The children exercised while standing and the sessions were accompanied by relaxing background music. The teacher leading the exercise stood in front of the class and began the first exercise in rhythm to the music. If familiar with the exercise, the students would also begin immediately. Each Xianggong lesson lasted for approximately 15 minutes (level one) or 25 minutes (short version of exercises from levels one and two).

Research methods

At the end of the project, in the week following the six months of Xianggong lessons, semi-structured in-depth interviews were conducted with the participating teachers. The same researcher (MB) conducted all interviews, with the opening question: "Have you noticed any changes in your students during the qigong project?" Towards the end of the interview the second main question was asked: whether the teachers were interested in continuing the qigong project and what needed to be improved in this case? Interviews were recorded and transcribed, then analysed by two researchers (MB, CW) and discussed. Analysis applied the Legewie method¹⁰ for global analysis followed by a detailed content analysis according to Mayring^{11,12}.

All interview participants had been informed about study procedures and goals and had given written informed consent. A native English speaker who has lived in Germany for more than 15 years translated the excerpts quoted below.

Results

A total of 140 children at four schools had received six months of Xianggong tuition, led by one trained teacher per school (except one elementary school with two teachers). All teachers participated for the whole project duration. The average frequency of Xianggong practice at school was four times a week.

Effects of Xianggong

The interviews with the teachers took on average 25±5 min (range 20-40 min). The reported effects were of a social nature as well as improved vitality and medical and psychological health. The first quotes illustrate the psychosocial effects.

Generally, the exercises were immediately calming: "The class is normally very restless and nervous; the lessons have a positive effect; children need such a resting-point. I was quite amazed by three boys who are usually very nervous and restless but then took part calmly during qigong." Teacher 3, elementary school.

An energising and concentrating effect followed calming down: *"At first many students found the interventions calming. Then later they experienced them as invigorating. The children interpreted the calming effect in part as tiredness."* Teacher 1, high school.

Both effects lasted, even in stressful situations: *"It was noticeable during instruction afterwards that the students were alert again and a bit more concentrated."* Teacher 1, high school.

"At the beginning of the exercises, some of the children would act really silly, but later they became less 'antsy'. As an experiment, I conducted shorter parts of the exercises with the students before they took a test. The exercises were very short, about five minutes. This seemed to help the students, especially those who would otherwise always get very excited. They were much calmer when they started their test." Teacher 1, high school.

Also, the general personality of at least some children became more "harmonious": *"... Some children who had been agitated before had become harmonious and quieter."* Teacher 2, elementary school.

"Since the qigong lessons the whole interaction of the children with each other is much more pleasant." Teacher 2, elementary school.

Aggression was reduced: *"Students who had been more towards the aggressive side the previous year had become more tolerant towards their peers."* Teacher 2, elementary school.

"One student always used to react aggressively to a wide variety of outside stimuli. Since starting the qigong exercises, his mood has become more stable and he doesn't react as aggressively as before. This has had a positive influence on the whole class." Teacher 5, elementary school.

The exercises created a bonding or community experience: *"In the beginning it was a real group experience, doing the exercises all together. The children had fun with it and they were able to completely relax in those moments. Sometimes during the second part they would start to hum, which was really nice. It was a completely relaxed atmosphere."* Teacher 3, elementary school.

"The atmosphere in the classroom was especially nice when we practised together in the mornings. We played music along with the qigong exercises and the children started to sing. It was a great, relaxed atmosphere. The children and I enjoyed this mood very much." Teacher 4, elementary school.

"The children gained the feeling that I was taking them seriously, because the qigong exercises showed I was concerned about their

health. That's what some of the students told me." Teacher 4, elementary school.

The only unwanted effects were nightmares: *"At the beginning of the qigong project, the children frequently reported having bad dreams. Many wanted to quit because of this, as they thought it came from qigong. In the course of the project, the bad dreams subsided. Some of the things the children told us were really shocking, however. They would come to school very troubled. We took time to speak about the individual dreams."* Teacher 3, elementary school.

Vitality improved in children and teachers, as can be seen in the following observations of vegetative reactions: *"Many students reported that the exercises made their hands and feet feel warm. I experienced the same sensation, and found the improved circulation very pleasant, because my fingers are often very cold. The exercises always made my hands and feet warm."* Teacher 1, high school.

"The first few weeks impressed me the most. A boy raised his hand and said, 'Since we started qigong I can fall asleep much better in the evening.' As a result, seven or eight other children also said, 'Yes, that's the same with me'." Teacher 2, elementary school.

Generally, health seemed to be better than before the intervention: *"For some of the children, springtime allergies were less severe. Also, several children who had mild colds reported that their noses and sinuses weren't as blocked up after the qigong exercises. Several mothers reported the same effects in their children after practising qigong with them at home."* Teacher 1, high school.

"Recently, as I was checking my class book, I realised that not one child had been out sick for weeks. I have the impression that, on the whole, the children have been less ill in this school year than during the previous year." Teacher 2, elementary school.

For some children, Xianggong seemed to have had a curative effect on their illnesses: *"One student suffered badly from an allergic reaction to cold temperature ... Before the qigong project he sometimes got red spots and blisters which itched like mad when he rode to school on his bike. This almost led to circulatory collapse and he had to lie down in a warm place immediately in order for his circulation to get back to normal. The positive effect of the qigong project was quite fast; we had begun the project in October and by November when it was cold it was obvious that he was feeling better. We even went skiing during the winter semester of the qigong project. ... While skiing he wasn't allergic to the cold anymore. ... When we stopped the qigong exercises, he was, once again, absent more frequently."* Teacher 1, high school.

Overall, nine cases of sleeping disorders were reported to have improved and one case each of migraine, slight spastic motion disorder and allergy to cold, although changes in medical treatment were not a target subject of the interviews. Teachers 3 to 5 (all elementary school) did not relate observations on vitality or medical issues.

Integration of Xianggong lessons into school

Regarding the social behaviour of the children and the integration of Xianggong into school teaching, three main topics were identified.

The teachers reported spontaneously that many parents were sceptical and that it was difficult to convince them of the project: *"We tried to convince the parents about the project, but it wasn't always easy."* Teacher 4, elementary school.

"Naturally, the children discussed the project at home, and a lot of parents were sceptical. So that was the attitude they had when they came to me." Teacher 1, high school.

A second problem was that the children's interest in Xianggong and their concentration decreased over time: *"The boys acted sillier than the girls when we did qigong exercises. They felt exposed. For them it wasn't something for boys, just girl stuff."* Teacher 1, high school.

"Some of the students were misbehaving, so others started to imitate them. In the meantime, though, the children accept the qigong exercises and all of them participate – some more and some less seriously than others." Teacher 2, elementary school.

"By the end, 18 of the 28 children were very focused. These were mostly girls. We had problems with some of the boys, who just started to be silly and romp around." Teacher 3, elementary school.

"Unfortunately the children grew tired of the qigong exercises, which were very repetitive. By the end they just did their exercises sloppily. I think it's important to offer them movements that aren't so stereotypical. But I don't know if qigong has anything like that." Teacher 5, elementary school.

But the most significant problem for the teachers was the difficulty of finding enough time for the Xianggong exercises during their regular school lessons: *"It would be nice if we had an extra class for qigong every day."* Teacher 1, high school.

"The main problem was that I had to fit qigong into my lessons. And every day for 10 minutes – that's not easy. So if it were offered as an additional course, it would be easier and more relaxed." Teacher 2, elementary school.

"At the beginning we were expected to do 15 minutes, and then with level two it was supposed to be half an hour. This caused problems with the school directors. They said that 15 minutes was doable, but no more." Teacher 4, elementary school.

Integrating Xianggong into regular school lessons was generally seen as workable, although the above difficulties were to be addressed in future projects.

Discussion

To our knowledge, the present pilot study is the first to evaluate the feasibility and explore the possible effects of any kind of qigong on school children. The project showed that it was possible to integrate Xianggong exercises into regular school lessons, although allotting extra time would be preferable. The qualitative analysis presented here intended to assess those effects that were not visible through the quantitative evaluation⁸, as well as potential difficulties associated with such a project. The aim in doing so was to gather information to aid in the design of future research projects and, ultimately, school health programs or curricula design.

Xianggong was chosen because it consists of simple physical movements that can be applied by teachers after a short period of training and be easily practised by young children of elementary school age. In contrast to other forms of qigong that are also suitable for children (e.g. the "game of the five animals"), Xianggong practice does not require much space and thus is more suitable for a classroom setting. For further projects it could be also interesting to evaluate the feasibility of other qigong forms, in a hall or gymnasium if necessary.

The reported benefits – calming, energising, "harmonising" and reduced aggression, community experience, improved vitality and health – are contrasted with the only seemingly adverse effect, temporary nightmares. These can be interpreted as a transitory issue from processing psychological material, but clearly more research is needed here. Due to the study design, the health improvements seen in some of the children cannot exclusively be attributed to the Xianggong intervention. So besides standardised questioning that will catch the collectively observable effects, any future research should prepare approaches that are sufficiently open for the unexpected, and collect medical and psychological information in an interdisciplinary manner.

Regarding social behaviour of the children and integrating Xianggong into school teaching, three main issues became apparent. At the beginning of the project, most parents were sceptical about a non-Western method being introduced at school and voiced concerns about religious indoctrination. Because of this, it is especially important to provide parents with detailed and serious information about qigong. It might be worthwhile offering qigong lessons to the parents themselves, so that they can

get an impression of what their children will be doing in addition to their normal schoolwork, and can exercise together at home if they wish to do so. The use of forms of qigong that rely on a visualisation of energy flow as an essential part of the exercises is not recommended – this concept might alienate parents with little or no knowledge of Eastern meditation methods or relaxation techniques. It seems wise to avoid any possible association with specific religious groups or sects.

The simplicity of Xianggong caused one of the observed problems. The frequent repetition of undemanding exercises proved to be somewhat tedious for the children, leading to a lack of concentration and to misbehaviour during the exercises.

The most significant problem mentioned by participating teachers was that they had only very limited time during regular school lessons to complete the Xianggong exercises. As the study demonstrates, it was possible to take time from other lessons to do the exercises – at least for a period of six months. However, the comments of participating teachers show that, if qigong or other relaxation techniques were to become a regular part of school lessons, they would need to be offered to students as an independent course with its own time slot. This course could be obligatory for all children or at least offered as an elective.

The study does not allow for making clear distinctions of the effects regarding age groups or school types. Only the high school teacher mentioned a directly energising effect, but the general vitality improvements seen in both school types are probably comparable to this. Reduced aggression and a stronger sense of community were only reported for the elementary schools, but this may be due to the four times greater number of observed classes here.

The present investigation was designed as a pilot study to explore the need for further research. The first issue to be addressed here would be a more objective database of direct observations. Seeing “through the teachers’ eyes” introduces both bias and inter-teacher variations of sensitivity, and is only justified by the pilot nature of the study. Other uncontrolled variables like home exercising need tracking. Psycho-social confounders like the Hawthorne-Effect (observation or attention induced changes) will have to be controlled for higher levels of evidence. The study is not representative, and the qualitative approach gives no solid evidence for a causal relationship with the observed changes. They are, however, promising enough to encourage more in-depth studies, and are backed-up by the quantitative part of the study⁸. In a broader investigation, interviews with the parents and the children themselves should be incorporated (the quantitative evaluation only used questionnaires), because it is likely that qigong practice will bring about changes that are not visible to teachers; it was only due to the nature of the disease or the specialisation of the teacher that health problems were noted in the interviews.

Further research thus requires a truly multi-disciplinary approach; it should also focus more on the nature of the effects of qigong and the development of measurements that are adequate for them.

Conclusions

The present study demonstrated that qigong could be integrated into regular school classes, although dedicated course time would be much preferable. Advantages and limitations of the used setting may provide useful advice for future projects. Enhancements of individual vitality and community strength were observed, and also social, psychological, and in some cases medical improvements. These are promising enough to warrant further research using improved methodology on feasibility and effects of school qigong programs. ■

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