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MARTIAL ARTS IN THE PANDEMIC

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ABSTRACT

This study examines the impact of the Covid-19 pandemic on martial arts training worldwide. A mixed-method online questionnaire consisting of 28 items was used as a survey instrument. 306 martial artists responded. These were mainly from the United Kingdom, the USA, Germany, Italy and Japan. The questionnaire focused on pragmatic adaptations of training volume, training rhythm, training location, training mode (individual or group) and training methods. The survey sought to gain insights into modifications that martial artists made as a result of the Covid-19 pandemic in relation to their training, curriculum, alternative fitness, strength and health activities, as well as training goals. The results suggest that the training restrictions implemented by governments in order to try to combat the pandemic transformed the practice of martial arts on a massive and fundamental scale. Specifically, they led to two seemingly opposing developments: increasing digitisation and an increased focus on the importance of embodiment. The article concludes with a suggestion that these lines of development will mould the post-pandemic landscape of martial arts.

INTRODUCTION

Wearing masks is a part of many martial arts and combat sports practices, such as *lucha libre*, pro wrestling, fencing, ninjutsu and kendo. In the infamous video game 'Mortal Kombat', characters like Scorpion, Sub-Zero, Kitana, Mileena, and Kabal wear elaborate masks, as do other protagonists in many kinds of martial arts media. However, when the COVID-19 pandemic cast a shadow on the entire globe in spring 2020, wearing such masks was not sufficient to withstand the successive crashing infectious waves. Civil and cultural life almost came to a complete stop as many governments imposed social restrictions in their efforts to battle the disease. This included much martial arts practice. To establish an understanding of the immediate effects on the martial arts, we developed an empirical study to target some key issues.¹

We anticipated that grappling practices might be more affected than some striking and weapons styles, as in most countries contact sports were restricted severely. Also, we expected to observe differences between martial arts which have established ways in which to train alone (for example, in solo forms, kata, patterns and *taolu*, or with training equipment such as punch bags), compared to practices that rely heavily on training partners (such as judo, wrestling or Brazilian jiu-jitsu (BJJ)). While government reactions to the pandemic around the world were often similar, in terms of shutting down martial arts training facilities and banning grouped sport practice, we expected the compliance levels of martial artists to differ, either nationally or perhaps according to style or level of personal or professional investment in the activity (for example, a hobbyist may be more compliant than someone whose livelihood depends upon it). We suspected that by having to adapt to state regulations, martial artists would modify their training curricula, methods, and practice goals. A key question was what the short-term and long-term effects of the pandemic on martial artists would be, and the ways in which future martial arts culture might be shaped by the pandemic and national responses to it.

METHODOLOGY

We developed and applied a mixed-method online survey, containing 28 items. Eight demographic items evaluated martial arts experience, country of residence, age, gender, income, living area, and martial arts occupation (whether instructor or not). The demographic items were separated into two blocks and placed as the first (3) and last (5) questions in the survey.

The core questions dealt with the influences of the pandemic restrictions on martial arts training. Most of them were split up into two items to evaluate the practice before and during the pandemic. Eleven items were constructed with a qualitative methodology which enabled open text answers. We used quantitative methodology for designing five-level Likert questions (3 items), single-choice (3 items) and multi-choice questions (4 items). All items could be skipped and/or had two escape options ('I don't want to answer this question' and 'I don't know').

We produced an English, Italian, German and Japanese version of the questionnaire (Table 1 opposite) and finalised the drafts via consultation with native speakers. The study design has been approved by the Ethics Committee of the University of Vechta to meet the requirements of the Declaration of Helsinki. The survey was conducted in February 2020, over 28 days. The participants were recruited via specific internet forums and social media. In addition, Martial Arts Studies scholars were specifically addressed via mailing lists. In total, 306 valid answer sheets were included in the evaluation. Partially answered sheets were also included when a specific quota of items was responded to.

The qualitative items were evaluated applying qualitative content analysis [Mayring 2004]. Consequently, the generated categories were reviewed by the research team and re-coded to enable quantitative analyses.

1 The idea for this study was born in a Martial Arts Studies Podcast conversation between Paul Bowman and Martin J. Meyer in Autumn 2020. The episode was released on 2nd November 2020, titled 'On Motivations, with Dr Martin Meyer, University of Vechta', and is available via all major podcast outlets: <https://martialartsstudies.podbean.com/e/on-motivations-with-dr-martin-meyer-university-of-vechta/>. It is also available as a video on the Martial Arts Studies YouTube Channel: <https://www.youtube.com/watch?v=iybpfwbVmY8>

	Question text	Options	Question mode
1	How many years have you practised martial arts in your life?	Years: _____ I don't want to answer this question I don't know	Single-Choice
2	Are you a martial arts instructor?	Yes No I don't want to answer this question	Single-Choice
3	What is the total number of martial arts you have ever practised?	Number: _____ I don't want to answer this question I don't know	Single-Choice
4	Has your government's response to the Covid-19 pandemic affected and/or restricted your training and especially martial arts training?		Open
5	Before restrictions were introduced because of the pandemic, which martial art(s) did you train and which was your main martial art?		Open
6	During the pandemic restrictions, which martial art(s) do you train and which is your main martial art?		Open
7	Did your interest in other martial arts change during the pandemic restrictions?		Open
8	Before the pandemic restrictions, did you substitute or enhance your martial arts training with other sports or training routines?		Open
9	During the pandemic restrictions, do you substitute or enhance your martial arts training with other sports or training routines?		Open
10	Before the pandemic restrictions, where did you practice martial arts?	At my own home, inside At my own home, outside (garden, lawn etc.) At someone else's home, inside At someone else's home, outside (garden, lawn etc.) Public club or dojo, inside Public location, outside Private club or dojo, inside Private location, outside Secret location Other: _____ I don't want to answer this question I don't know	Multi-Choice

Table 1:
Questionnaire
(English version)

	Question text	Options	Question mode
11	During the pandemic restrictions, where do you practice martial arts?	At my own home, inside At my own home, outside (garden, lawn etc.) At someone else's home, inside At someone else's home, outside (garden, lawn etc.) Public club or dojo, inside Public location, outside Private club or dojo, inside Private location, outside Secret location Other: _____ I don't want to answer this question I don't know	Multi-Choice
12	Before the pandemic restrictions, what was/were your preferred martial arts practice mode(s)?	Single training Group training Live online courses Recorded online courses Other: _____ I don't want to answer this question I don't know	Multi-Choice
13	During the pandemic restrictions, what is/are your preferred martial arts practice mode(s)?	Single training Group training Live online courses Recorded online courses Other: _____ I don't want to answer this question I don't know	Multi-Choice
14	Before the pandemic restrictions, how often did you practice martial arts weekly on average?	Once Twice Three to four times Five to six times Daily Several times a day I don't want to answer this question I don't know	Single-Choice
15	During the pandemic restrictions, how often do you practice martial arts weekly on average?	Once Twice Three to four times Five to six times Daily Several times a day I don't want to answer this question I don't know	Single-Choice

	Question text	Options	Question mode
16	Has the total amount of time you spend practising martial arts increased or decreased since the start of the pandemic restrictions?	Decreased greatly Decreased slightly Stayed the same Increased slightly Increased greatly I don't want to answer this question I don't know	Likert
17	Has your martial arts practice curriculum changed during the pandemic restrictions?		Open
18	Have your martial arts practice methods changed during the pandemic restrictions?		Open
19	Have your martial arts practice goals changed during the pandemic restrictions?		Open
20	After the pandemic has passed, do you think you will return to your former training regimen or will you continue to train as you have done during the period of restrictions?		Open
21	What do you think are the long-term effects of the pandemic and its training restrictions regarding your martial arts practice?		Open
22	During the restrictions (e.g., lockdown), have you taken part in martial arts practice sessions that are or were banned at the time?	Never Rarely Sometimes Often Regularly I don't want to answer this question I don't know	Likert
23	During lockdown or restrictions, have you taken part in martial arts competitions or tournaments that are or were banned at the time?	Never Rarely Sometimes Often Regularly I don't want to answer this question I don't know	Likert
24	In which country do you live?		Open
25	What is your gender?	Female Male Non-binary I don't want to answer this question	Single-Choice
26	What is your year of birth?	Year of birth: _____ I don't want to answer this question	Single-Choice

	Question text	Options	Question mode
27	In which kind of area do you live?	A big city The suburbs or outskirts of a big city A town or a small city A country village A farm or home in the countryside I don't want to answer this question I don't know	Single-Choice
28	What is your household's total income, after tax and compulsory deductions, from all sources? If you don't know the exact figure, please give an estimate. Use the income that you know best: weekly, monthly or annual. Please add your currency (symbol or chars).	Weekly: _____ Monthly: _____ Annual: _____ I don't want to answer this question I don't know	Single-Choice

Figure 1: Countries of residence of respondents

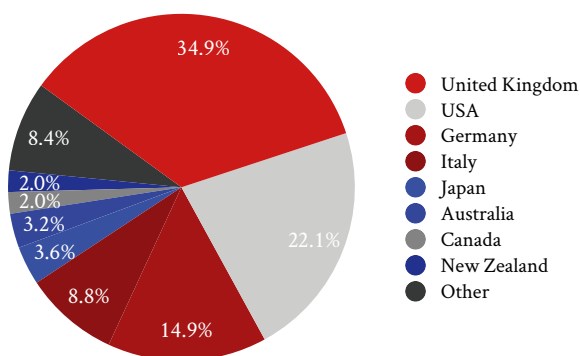
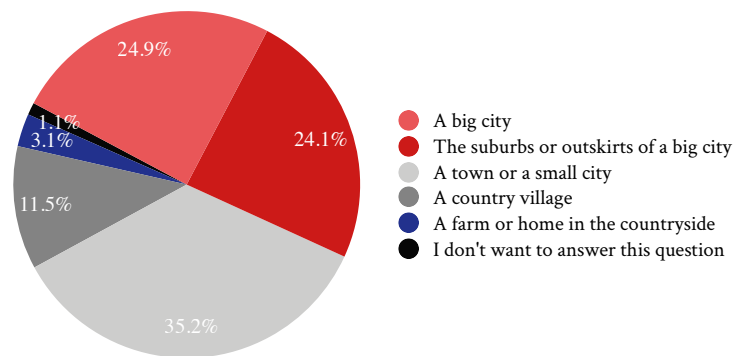


Figure 2: Living areas of respondents



DEMOGRAPHICS

Of the valid questionnaires, 235 were completed in English, 44 in German, 26 in Italian and one in Japanese. 86 % (n=222) of the respondents were male and 14 % (n=35) female.²

The average age of the participants was 47.7 years (SD = 12.03; MIN = 15; MAX = 79). More than half of the participants described themselves as instructors (54 %, n=166). Due to the limited language versions, a huge share of the participants resided in Western countries or were native Westerners living abroad. See Figure 1: Countries of residence of respondents (opposite).

Figure 2 (opposite) shows that nearly half of the participants lived in urban or suburban areas.

Maybe due to the high number of martial arts professionals, i.e. instructors, many participants stated that they had training experience in multiple styles with an average of >3.85 styles. See Table 2: Martial arts experience (right) and Figure 3: Martial arts styles experience (right).

Accordingly, the overall temporal martial arts experience turned out to be higher than expected, but nevertheless sufficiently diverse.

RESULTS

Impact of governmental restrictions on martial arts training practice

95 % of the participants stated that their government's responses to the Covid-19 pandemic affected and/or restricted their (martial arts) training. In most cases, public training locations closed down, contact training was prohibited, training areas regularly had to be disinfected and practitioners had to rely on solo training, sometimes enhanced with virtual lessons using Zoom, Skype or comparable applications. Whenever possible, people attempted to train in parks. The following quotes are representative of many participants' stories.

In 2020 I couldn't really go to any classes from March to October. Classes were suspended again around the first week of December. From October to December classes were supposed to be practising socially distanced training. Some clubs were better at this than others (and some clubs

² Missing or escape answers are not included in this ratio, nor in the following.

Figure 3: Martial arts styles experience

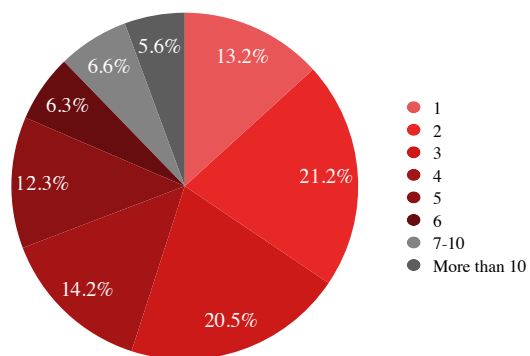


Table 2 : Martial arts experience

Martial arts experience	Participants	
<= 5 years	24	8 %
<= 10 years	43	14 %
<= 15 years	42	14 %
<= 20 years	48	16 %
<= 25 years	31	10 %
<= 30 years	38	12 %
<= 35 years	22	7 %
<= 40 years	22	7 %
<= 45 years	15	5 %
More than 45 years	21	7 %

ignored those guidelines entirely). From May to November I went to a nearby park and practised some solo weapons drills. This did wonders for my mental health but practising without any feedback has meant I've developed some bad habits, and I've also noticed my posture is becoming poorer. It's also a bit mentally draining to try and practice on your own all the time. Generally I've been very lonely. I've not had much opportunity to train over the winter months. It's rained so much that if I do train I just slip in the mud and tear the grass to shreds.

My country had an initial moment of total lockdown until May 2020, and this completely stopped our dojo training. Personally, my practice was restructured around physical preparation and solo drills. After the summer, gym activities resumed but with rather tight limitations regarding spacing, albeit with exceptions for activities with predominant contact but under contact tracking conditions. In the training of my main activity, it was decided to totally limit sparring or exercises in pairs between participants. In the practice of another martial art whose classes I attended, contact was maintained, being extremely predominant, although limiting the time devoted to it during training, adding preparatory exercises or two-person exercises with the help of objects (belts, elastic bands, balls) to decrease the potential for contagion. With the wave of infections in mid-November, activities stopped again, except for those dedicated to competitive athletes. At the moment, training continues in online mode, and naturally still focuses on physical preparation (limited, as the surface available to many participants is very small), technique and drills.³

Whenever possible, participants converted their home into private dojos ('I've been able to practice with my 14-year-old child at home by buying home mats'. 'I have a garage and my son is a shoran [sic]

3 'Il mio paese ha avuto un iniziale momento di lockdown totale fino a maggio 2020, e questo ha bloccato completamente gli allenamenti del nostro dojo. Personalmente, la mia pratica si è ristrutturata attorno a preparazione fisica e drills a solo. Dopo l'estate le attività delle palestre sono riprese ma con limitazioni piuttosto strette riguardo al distanziamento, pur con eccezioni per le attività con contatto preponderante ma in condizioni di tracciamento dei contatti. Negli allenamenti della mia attività principale si è scelto di limitare totalmente lo sparring o esercizi a coppie tra i partecipanti. Nella pratica di un'altra arte marziale di cui frequentavo le lezioni il contatto si è mantenuto, essendo estremamente preponderante, seppur limitandone il tempo dedicato durante gli allenamenti, aggiungendo esercizi propedeutici oppure a due persone con l'ausilio di oggetti (cinture, elastici, palle) per diminuire il potenziale di contagio. Con l'ondata di contagi a metà novembre, le attività si sono fermate di nuovo, salvo quelle dedicate ad atleti agonisti. Al momento gli allenamenti continuano in modalità online, e naturalmente sono focalizzati ancora su preparazione fisica (limitata, visto che la superficie a disposizione di molti partecipanti è molto ristretta), tecnica e drills.'

in karate, so I can train and have a partner to train with'). However, participants reported that martial arts competitions, gradings and workshops and camps nearly all came to a standstill.

Inevitably, there were differences in government responses to the pandemic. For instance, Japan never imposed a strict lockdown, rather hedging training conditions:

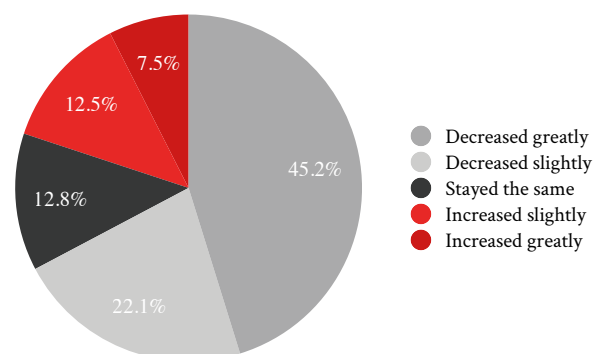
[The] 1st lockdown in Tōkyō prevented use of the community centre in which we reserve rooms for our dōjō's training. The second (current) 'lockdown' restricts use of community centres after 8pm. This reduced our 3 hour training to 2 hours. During training, we wear masks, increase ventilation, have hand sanitiser available, and participant names, body temperatures, and contact information is recorded and given to the community centre reception for traceability in the event of infection. Also, we are unable to train at the headquarters dōjō in Okinawa.

Meanwhile, several prudent states like New Zealand managed to re-open sport facilities without limitations, albeit only by imposing strict limits on international travel.

Changes in overall training time amount

It is not surprising that approximately two-thirds of the participants noticed a slight or great decrease in their overall training time. However, 7.5 % reported a greatly increased amount of time spent training, a fact which will be discussed later. See Figure 4: Changes in training time amount (opposite).

Figure 4 : Changes in training time amount



Changes in training location

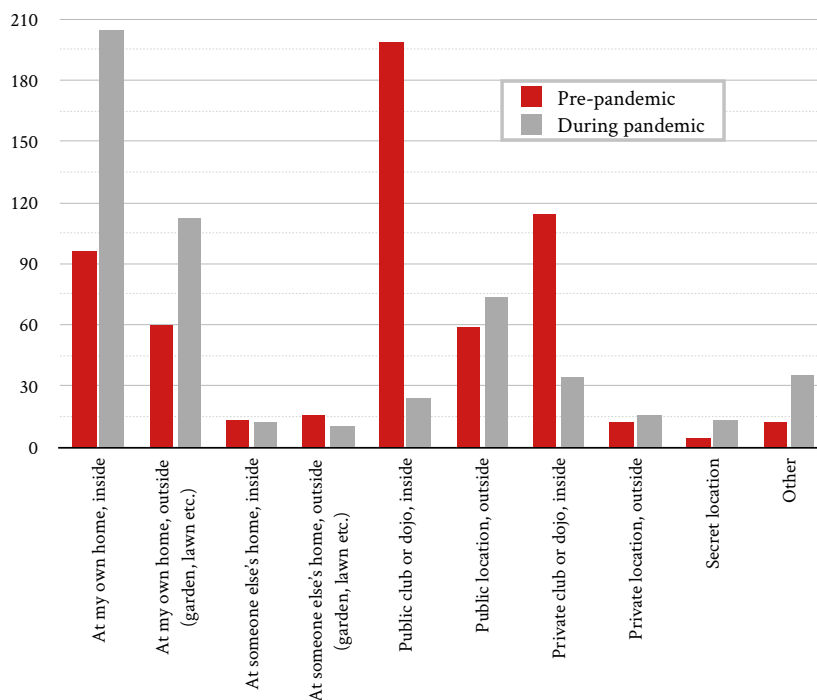
A strong reason for the reduction of training time was the governmental shutdown of training facilities like sports clubs and dojos. As figure 4 illustrates, the main training locations shifted greatly from public and private clubs to home exercise. See Figure 5: Changes of training locations (multiple answers possible) below.

In the category 'other', participants mostly listed university facilities and international seminars during the pre-pandemic times. Other training locations during the pandemic were mostly private built, homemade dojos and garages. Noticeable is the rise of secret training locations, which will be discussed below.

Changes of training rhythms

According to the lowering of overall training time, training rhythms were profoundly affected by the pandemic restrictions, in that participants tended to exercise less often. See Figure 6 (overleaf): Training rhythms before (left) and during (right) the pandemic.

Figure 5 : Changes of training locations
(multiple answers possible)



Changes of training, substitutions and enhancements

Nearly two-thirds of the respondents already enhanced their martial arts training pre-pandemic with supplementary activities, such as weightlifting or bodyweight workouts, as well as stretching, fitness routines, other sports or other martial arts. Interestingly, during the pandemic these numbers actually rose, although there was less engagement in weightlifting and fitness practices that are difficult to do in times when gyms are closed and large, expensive or specialist equipment is required (e.g. respondents tended to focus on 'Mainly body weight and cardiovascular exercises like push-ups, air squats, sit-ups and burpees'; 'Weight training and resistance exercises in my swimming pool').

On the other hand, the uptake of other sports was significantly expanded, mostly in terms of easy to perform outdoor activities like walking, running, hiking, and cycling, as well as indoor activities like Pilates, qigong and yoga. ('I still augment my training with Bikram yoga, although the studio is closed and I have to heat up my bathroom with space heaters to get the same effect').

See Figure 7 (overleaf): Training substitutions and enhancements before (left) and during (right) the pandemic.

Figure 6:
 Training rhythms before (left) and during (right) the pandemic

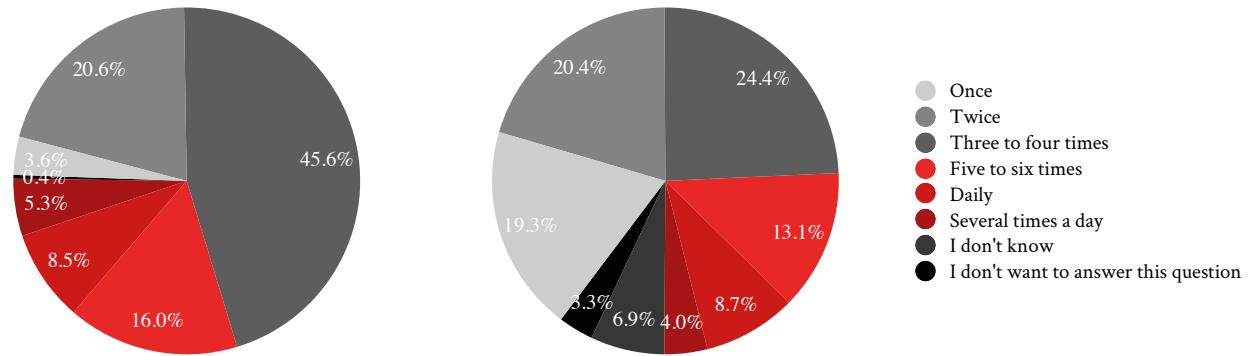


Figure 7:
 Training substitutions and enhancements before (left) and during (right) the pandemic

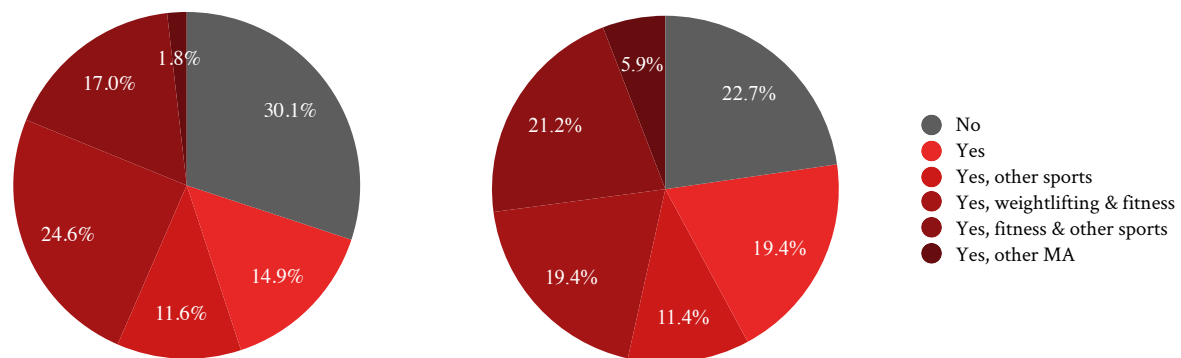
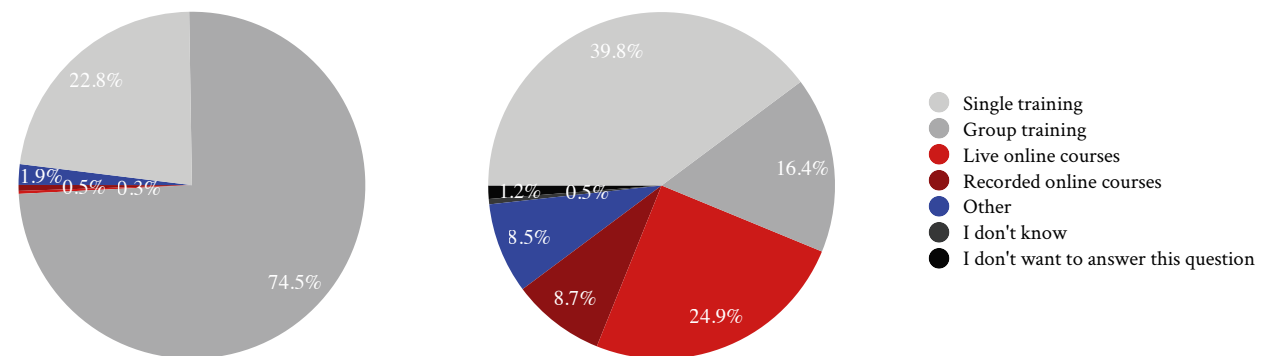


Figure 8:
 Preferred training practice models, before (left) and during (right) the pandemic



In online martial arts classes, instructors adapted their training to fit home practice, borrowing elements from other martial arts and implementing more fitness routines:

The pandemic has slightly increased the amount that my practice group pulls exercises from non-martial callisthenics and sometimes dance exercises. We have to focus on solo training now, much of which is footwork-oriented, so we get a bit less technical and do a bit more conditioning. We draw upon whatever foundational exercises seem useful. In addition, some members of my practice group are a little concerned about being too inactive, so they have more interest in conditioning with callisthenics.

Changes of preferred training models

One of the most striking changes in martial arts training took place in the preferred practice models. Obviously, the pandemic caused a huge decline in group training (from 74 % to 16 %), as well as an increase in solo training (from 23 % to 40 %) and a surge of live and recorded online courses (from 1 % to 34 %).

See Figure 8 (opposite): Preferred training practice models, before (left) and during (right) the pandemic.

In the 'other' category, participants noted 1-on-1-training (occasionally as instructor/student-training), during the pandemic especially with family members or friends.

For the few weeks I was able to practice in public with others we could still practice patterns [...] in socially distanced groups. I haven't attended Zoom classes because video calls make me anxious, but my understanding is that TKD Theory (ie, history of the art and Korean terminology) has been less emphasised, I think probably because the instructor is trying to make it as fun as possible to keep people coming back and most people don't like theory [...] Sparring has become completely impossible; my instructor has tried to do a sort of 'shadow sparring' thing, but honestly it's cringy and I was not comfortable engaging with it. As well as not being able to make contact, when there were public classes, only people training with family members were allowed to use kick shields (and they had to clean them before and after) [...].

Curriculum changes

In this context, at the formal, organisational and administrative level of clubs and associations, the 'inner structures' of curricula, methods and goals were altered as well. 84 % of the participants stated that they adapted their training curriculum due to the pandemic restrictions. See Figure 9 (overleaf): Changes in martial arts practice curriculum.

As expected, most participants had to forgo the practice of partner forms and 1-on-1 combat, like grappling, throwing and sparring. ('Before the pandemic we spent at least 60 % of our time or more on paired practice. During the pandemic we are spending 100 % of our time on solo practice – kata, drills, etc. – at a minimum of 6 feet distance. It is a massive change'. 'Yes, our self-defence routines were modified greatly'.)

Advanced combat interactions were reduced in favour of basic technique training and solo choreographies (such as kata, poomsae, and forms), in some instances giving much more importance to self-perception and body awareness.

Other martial arts are integrated, the focus is on exercises that can be done alone and that promote self-awareness, the training is no longer geared to the examination programme and is designed so that both beginners and advanced students can follow along, and new exercises are developed for training without a partner.⁴

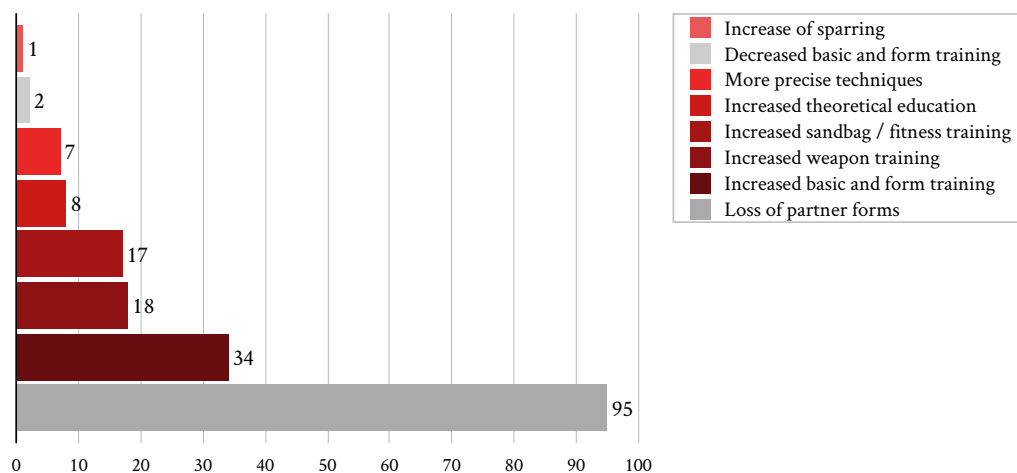
[...] the emphasis in the curriculum has completely changed to solo drills, a lot of focus on biomechanics (as much as possible without a second person to give tactile feedback on this), flow, timing, and distance.

Also, several practitioners of throwing/grappling martial arts switched to specific (niche) training fields, mostly single weapon training (especially aikido devotees). ('Yes, in aikido we do much more weapons work now and very little to no person on person technique'.)

Practitioners of striking martial arts replaced their training partners with sandbags and punching bags and/or implemented more fitness routines into their curriculum. ('More focus on solo training drills. Flow drills, weapon handling drills, bag work'.) Also interesting is the moderately increased awareness given to precision in technique execution. ('Greater emphasis in correct technique in patterns'.) This may reflect anxieties in times where the technical guidance and correction mechanisms of teachers and peers were missing. Answers to further items certainly showed that people were worried about losing their technical skill or picking up 'bad habits' (as the following quote illustrates: 'Focused on single form training, trying not to build bad habits from the lack of an instructor and partner').

4 'Ja. Es werden andere KuK integriert, der Fokus liegt auf Übungen, die man allein durchführen kann, und die die Selbstwahrnehmung fördern, das Training ist nicht mehr auf das Prüfungsprogramm ausgerichtet und so gestaltet, dass sowohl Anfänger als auch Fortgeschrittene mitkommen und es werden neue Übungen für das Training ohne Partner entwickelt'.

Figure 9:
Changes in martial arts practice
curriculum



But the drive for precision also had rather pragmatic implications, as practitioners had to be careful executing techniques in confined home spaces ('Confined spaces of some students homes obliges a change in the practice curriculum and favours practising to improve flexibility, balance and precision of movements. The philosophy is that: Slow is fast').

Also remarkable is that several instructors extended their online courses with theoretical lectures and discussions, sometimes arranged as therapeutic open talk concerning living and training in the pandemic ('Completely changed from physical activity to theoretical discussions based on historical treatises'). Similarly, some individuals used their time at home to delve into martial arts books and media to broaden their general martial arts knowledge or to act as a surrogate to personal training guidance.

Karate training has shifted online, and our instructors have shifted emphasis to technical aspects of the art normally left for much higher grades (e.g. deeper interpretation of kata, weapon work etc.), and we have had to rely on visualisation where sparring/kata application would normally be trained.

*I had the time to memorise the teaching books, which are considered to be the bible. If it is because of this time at Corona that I was able to work on it, it is also because of Corona!*⁵

Instructors themselves occasionally revisited their teaching curriculum – often to make it suitable for online instruction – but sometimes also to give it a general overhaul.

[My martial arts practice curriculum changed] but not due to the pandemic, mainly because I had time to consider improvement to our syllabus.

Moving to an entirely online delivery platform has significantly changed what aspects of the curriculum can be covered.

[...] lots of adaptations for live online sessions.

Methodical changes

More than half of the study participants did not answer this item, far more than in the case of nearly every other item (except the following one). We suspect that the intention of the research question was not transparent enough or there just were no method adaptations to report. Besides the obvious increase in online training, several participants stated that they adapted their methods to be practical in confined home spaces. Whirling around long-range weapons was a constant threat to household integrity.

Yes, due to the respective regulations/restrictions, the training had to be conducted in a different form (solo) with different methods (online training, WhatsApp coaching, video analysis) and with a different focus (movement mechanics, building up conditional attributes).⁶

Training has moved online with four half-hour sessions with specific belts (red belts, black belts etc.) versus two 1-hour training sessions with a mixed ability class a week. All theory material was consolidated on a central portal for the school including recordings of patterns, line work and set sparring.

5 「バイブルとされる教本を覚える時間を持ってました。コロナのこの時期だからこそ取り組めたとすれば、コロナのおかげでもあります」

6 'Ja, durch die jeweiligen Verordnungen / Beschränkungen musste das Training in anderer Form (Solo) mit anderen Methoden (Online-Training, WhatsApp-Coaching, Videoanalyse) und mit anderen Schwerpunkten (Bewegungsmechanik, Aufbau konditioneller Attribute) durchgeführt werden.'

Practice goal changes

Here also, 160 participants did not answer the question, maybe for the same reasons as mentioned above. A further 104 participants stated that their goals had not changed, in some instances emphasising that goals only have been delayed or that the route has been altered.

No [changes]! Menkyo kaiden or die tryin'!

No [changes]. Goal is still to improve skills and understanding, the pandemic is just forcing a different route of getting there and an emphasis on different aspects for a while.

We decided not to use the psychological term ‘motive’, instead relying on the term ‘goal’ in the survey question, as participants might not have an exact concept of motives or motivations [Bowman 2020; Meyer and Bittmann 2018]. Also, the term ‘motive’ turned out to be difficult to translate into further questionnaire versions, altering the semantic meaning significantly (especially in Japanese). The term ‘goal’ has its shortcomings, too, as it supports some kind of final purpose unlike the more directionless ‘motive’ which better can be used to describe emotional state-related motives like fun, flow, and thrill. See Figure 10 (below): Changes in martial arts practice goals.

Overall, the participants’ statements illustrate that for most of them, the pandemic restrictions seriously interrupted the continuity of their martial arts training progress. We recognised three basic compensation types.

The first type is characterised by a stagnation in martial arts training, expressed by having no goals at the moment (7 mentions) or lower motivation to train (6 mentions).

[...] I have suspended any thought of goals.

Yes, the restrictions mean that I'm starting to have problems keeping motivated. You have no perspective.⁷

Due to lack of access to tools and stress from the pandemic I lack motivation and often merely go through the motions of training, without feeling the joy and silence I usually do.

The second type is characterised by trying to maintain skill-level (21 mentions), keeping fit (13 mentions) or sticking to the regular training routine (4 mentions).

Instead of naturally progressing I focused on repeating previously done routines and drills.

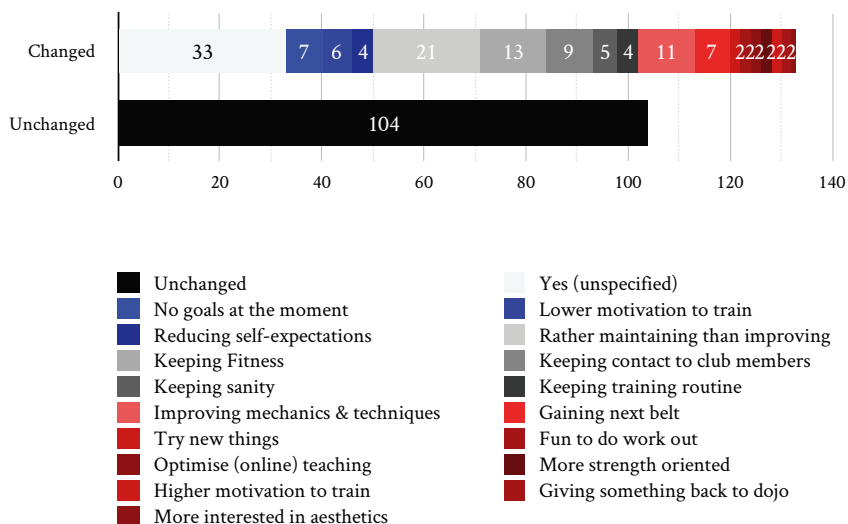
Only that I must focus more on maintaining than improving.

This goes along with the insight that the self-expectations related to training and skill progress had to be reduced for the time of the pandemic. Many participants’ comments suggested that they were filling this hiatus in their martial arts career with self-reflection and a re-assessment of the importance, goals and position of martial arts in their own lives. This self-reflection often seemed to be related to the sudden removal of competitions and gradings, which suspended common performance motives.

Yes, a lack of competition available has changed the way I set goals and train martial arts.

⁷ ‘Ja, die Verbote bewirken, dass ich so langsam Probleme habe meine Motivation zu halten. Man hat ja keine Perspektive.’

Figure 10:
Changes in martial arts
practice goals



I'm still determined to get my black stripe but accepting this may take longer. I'm desperate to compete again ... it's been a year now since last competition.

This view affected also the aspiration level of the general curriculum:

The curriculum per se has not changed but the expected expertise levels have been possibly adjusted to recognise the impairment in training and tuition.

Also, participants affirmed that they tried to keep contact with other club members (9 mentions) and wanted to give something back to the club in hard times (2 mentions).

We're mainly fighting to maintain interest and social cohesion so that there is a group of students to return to classes when we can have in-person classes again.

I am also wanting to give back to my club as their continuing training has helped me and my son so much. I want to help out in any way I can.

Also mentioned is the aim of keeping 'sane' (5 mentions). In this, we find an important clue about the importance of martial arts practice for mental health and wellbeing. This might be interpreted either as a long-time 'outcome' (or unexpected 'by-product' of earlier 'motives'), one that gained more relevance during the pandemic; or it might be interpreted as a new dimension that emerged as a coping strategy to help withstand the unique burdens the pandemic laid upon practitioners – such as general anxiety, fear of job loss, pessimism about future life, and the lack of social and physical interactions.

I used to train to stay fit and socialise. Now I train to stay sane.

My general goal is just to stay in shape and stay sane during the pandemic. I really can't progress in aikido without contact-based practice.

I have advised several practitioners on methods to maintain an adequate level of physical fitness but above all I have called upon the aikido practitioner's capacity for adaptation and resilience and urged them to use it to deal with the psychological problems caused by the pandemic, which are sometimes more serious than the material ones.⁸

8 'Ho consigliato diversi praticanti riguardo ai metodi per mantenere un livello adeguato di preparazione fisica ma soprattutto richiamato la capacità di adattamento e resistenza del praticante di aikido invitando a utilizzarla per affrontare i problemi psicologici causati dalla pandemia, a volte più gravi di quelli materiali'.

The third type is characterised by regarding the pandemic rather as an opportunity to improve and revise martial arts techniques and mechanics (11 mentions); to prepare for belt gradings (7 mentions); to try new things (2 mentions); or to shift attention to specific martial arts features like strength (2 mentions) or aesthetics (1 mention).

Probably become more focused. It's given me time to study techniques and videos in more depth.

Yes, I am more focused on improving technique rather than learning new forms.

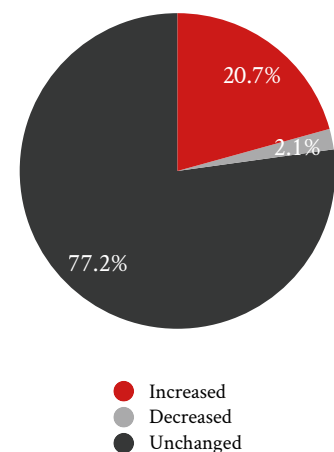
Because of the time savings (no travel time to dojos) and access to better teachers, I'm endeavouring to train more often.

Two instructors stated that they were more motivated to review and optimise their teaching style.

Changes in inter-style martial arts interest

It is interesting to see how loyal participants were to the martial arts. However, it must be acknowledged again that a huge proportion of the sample have a professional relationship with martial arts, being martial arts instructors and therefore more likely to stick with them. Only 2 % admitted waning motivation in martial arts overall, mostly citing increased obligations and the impossibility of practically continuing training.⁹ More than three quarters of the survey declared no change of interest in martial arts (Figure 11 below).

Figure 11:
Changes in (inter-style)
martial arts interest



9 'The pandemic restrictions have made it difficult to still be motivated to train martial arts.'

The growth of interest in other martial arts, which 21 % reported, stems in many ways from various adaptational effects, as mentioned above. Certainly, boxing, kickboxing and MMA gained more interest. This is because:

a. other contact martial arts were more difficult to practice. (*I started to look at striking arts that could largely be non-contact.*)

b. the absence of training partners led participants to adapt their practice by using equipment like punching bags and limited space training drills.

I focused more on boxing and kickboxing since I purchased a punching bag to occupy myself.

Yeah, picked up a lot of tips from boxing regarding rope skipping.¹⁰

I started to become more interested in different disciplines such as Western boxing and jiu jitsu. I have started developing my boxing skills as punches are limited in taekwondo and it has no ground work so I intend to start doing jiu jitsu when covid restrictions are lifted to make me a more rounded martial artist.

c. huge pay-per-view organisations representing these martial arts were the few that decided to continue competitions and therefore secured their visibility, such as UFC, Bellator, Top Rank, PBC, WWE, AEW and Golden Boy.¹¹ Interestingly, while these outlets also had far fewer events, there is evidence to suggest that they expanded their audience to some who had only ever had a limited interest in these martial arts pre-pandemic.

[...] the UFC mixed martial arts organisation was the only one still running.

This accompanies a general increased interest in online resources, especially YouTube, which we interpret as a concomitant to the surge in Zoom classes.

You could say that in the sense that I have a lot of free time and I get to watch videos on YouTube. I've been getting more and more into boxing and MMA techniques.

10 'Ja, habe viele Tipps von Boxen abgeschaut, was Seilspringen angeht'

11 See: https://www.espn.com/mma/story/_/id/30056977/how-combat-sports-pipeline-broke-2020. Last accessed 10th June 2021

Naturally, video streams were an important surrogate for or supplement to regular group training. But in fact the relevance of online and offline resources has exceeded this by far. Many participants used their enforced extra time at home to enhance their martial arts knowledge and deepen their inter-stylistic understanding besides ordinary online classes, as the following statements demonstrate.

In the time since the pandemic started I've been listening to martial arts podcasts and reading academic work on martial arts practice. I was interested in trying other arts in the past, but due to the podcasts and reading I'm even more inspired to branch out and try other systems at some point.

I can't train but watch YouTube for techniques I can't practice. I'm interested vicariously in more arts. I watch more technical videos but don't train. I'm a tourist.

I have had more time for researching karate kata techniques, which includes cross referencing similar techniques in other martial arts.

Compliance with governmental restrictions

In the public discourse, and especially in the martial arts community, engagement in martial arts practice is often presented as supporting moral and social behaviour – at the very least, towards training partners, competition opponents, but also, often, in relation to many other aspects of social and interpersonal life. It would be an oversimplification to measure these high standards solely according to adherence to governmental, legislative instructions, but if martial artists truly obey strict philosophical-moral ideals, one might expect a significantly altruistic adherence to socially responsible rules in relation to the pandemic.

Looking at the five most represented countries in the study survey, the severity, strictness and level of enforcement of restrictions concerning martial arts practice is obviously very heterogeneous. Similarly, in different countries, people's compliance with government institutions and law differs widely too. Nevertheless, we were surprised that in these five states, nearly one-fifth of the study participants acknowledged that they had participated in training sessions that were legally banned at that time. On the other hand, only two participants in the entire study admitted participating sometimes or regularly in banned competitions (Table 3 overleaf).

Due to the methodological limitations of the study (see below), regarding predominantly the survey size and translanguistic inconsistencies, an international comparison between compliance levels of martial artists must be met with caution.

Although figure 12 (opposite) shows that martial artists in Japan engaged more often in banned practice sessions in reference to the four other states, in fact most of the study participants living in Japan seem to be foreigners, as only one questionnaire was filled out in Japanese.¹²

It has to be mentioned, too, that the Japanese government did not enact any restrictions which affected martial arts practice, rather it *advised* its citizens to respect public health rules.

[...] the government in Japan never specifically closed dojos, sometimes they would 'ask' gyms and stuff have restricted opening times but we were never told 'not to train' and as much as I love teaching and want to train I decided to halt training for my own and my students' peace of mind.

A male US citizen, who was not an instructor, marked an exception, freely admitting that the pandemic did not affect or restrict his martial arts training:

When our gym was closed we practised in secret at people's houses.

12 Also, the statements of these participants concerning other items indicate this conclusion

By contrast, several participants stated that:

- a. their gym closed even before governmental actions took place.

The government placed restrictions on martial arts schools, but these didn't affect us because our school's policies were more cautious/protective than the regulations. We have been closed since March 2020. [US, male]

I voluntarily suspended my training in BJJ and Muay Thai for my health and the safety of my household. I stopped before my state imposed restrictions. [US, male]

- b. they would have restricted training themselves if no official sanctions were launched:

However, I would have interacted very much less with other people even if the government had not placed restrictions. [UK, male]

There have been regulatory limits on in-person training. However, even in the absence of such regulations, I would not have conducted in-person classes. [South Africa, male]

- c. or their own training restrictions were even more strict than governmental guidelines:

Table 3 :
Participation in banned training sessions and competitions

Participation in banned training sessions		... competition	
Never	197	64,4 %	255	83,3 %
Rarely	20	6,5 %	0	0,0 %
Sometimes	16	5,2 %	1	0,3 %
Often	5	1,6 %	0	0,0 %
Regularly	10	3,3 %	1	0,3 %
I don't want to answer this question	6	2,0 %	2	0,7 %
I don't know	7	2,3 %	2	0,7 %
No answer	45	14,7 %	45	14,7 %
	306	100,0 %	306	100 %

Technically my government has affected my training, but not in practice. For ethical reasons, I have voluntarily restricted myself more than my government has. [US, male]

We closed the courses, and when we were given the opportunity to resume we did so on a non-contact and quota basis, i.e. with a reduced number of people.¹³ [Italy, male]

Changes in martial arts styles trained

Perhaps the most fascinating question in our study related to which specific martial arts were more likely to be trained less or more as a result of pandemic restrictions and if these shifts were temporary.

It must be pointed out, that the study survey was not representative in any way. Several martial arts were more covered by the participants than other, the foremost being aikido, taekwondo, karate, BJJ, MMA, jujutsu and historical European martial arts (HEMA). Also, many participants were martial arts instructors with a common knowledge of various martial arts styles, who were hence capable of switching between them as befitted the circumstances (see figure 3).

13 'Abbiamo chiuso i corsi, e quando ci è stata data la possibilità di riprendere l'abbiamo fatto senza contatto e contingentato, cioè con un numero ridotto di persone.'

As expected, the practice of grappling styles such as aikido, jujutsu, judo, BJJ, MMA, hapkido and wrestling declined significantly. In direct comparison, standing sports such as taekwondo, karate, kickboxing, boxing and wing chun experienced a smaller loss in terms of practice. Inexplicable exceptions are Muay Thai and krav maga. Weapons-based martial arts such as HEMA, kenjutsu, fencing, kendo and jodo also suffered comparatively little loss, or even gained in practice. However, the hybrid weapons- and close-contact styles of Filipino martial arts also record losses in terms of training. Strikingly, in contrast to all other martial arts, practice in iaido grew significantly, as has the related practice of koryu bujutsu. Probably due to its strong basis in solo forms, taiji also suffered comparatively low levels of loss.

Long-term effects on individual martial arts practice

The majority (two thirds) of the participants stated that they expect to resume their pre-pandemic training arrangements when restrictions are lifted. Of the remaining third, 25 participants said that they would also try to incorporate parts of their new pandemic training routine once the restrictions were lifted.

I intended to return to the previous regimen, and supplement it with additional training established during the period of restrictions.

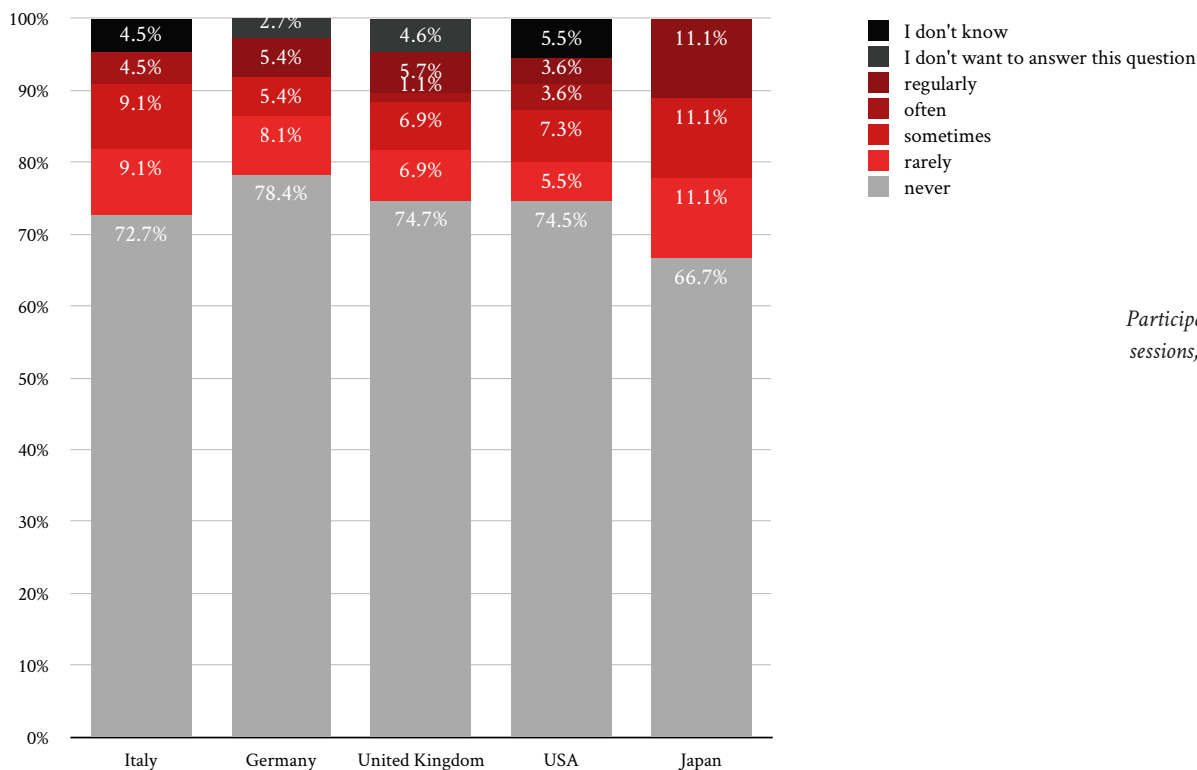


Figure 12.:
Participation in banned training sessions, distinguished by nation

We'll return to the former training regimen, but probably incorporate some aspects we've been working on during the pandemic where we've found them effective for addressing aspects of the training.

Maybe a mixture. More supplementation of the regular training in the gym by autonomous work externally, but generally as before (if the gym still exists).¹⁶

Others (19) commented that they would like to keep online training sessions, also in a hybrid format.

One participant explicitly declared that they intended to continue outdoor training:

Some services, such as online seminars and online training across borders would also be a nice addition after the pandemic.¹⁴

Solo training in the park will continue (positive effect of the pandemic), but eventually together with fellow students.¹⁷

I think I will continue to offer online training, and change my schedule to include online classes, and hybrid classes where some participants may be online.

Twelve participants announced that they intend to increase their overall training amount, and that they will do so by combining both pandemic and pre-pandemic practices:

There is also a trend to keep formats of single (home) training (15 mentions).

Only train more often. What we have now is better than it was.

I will return mainly to group lessons but personal practice will remain increased.¹⁵

Interestingly, six participants intended to switch to a different martial art.

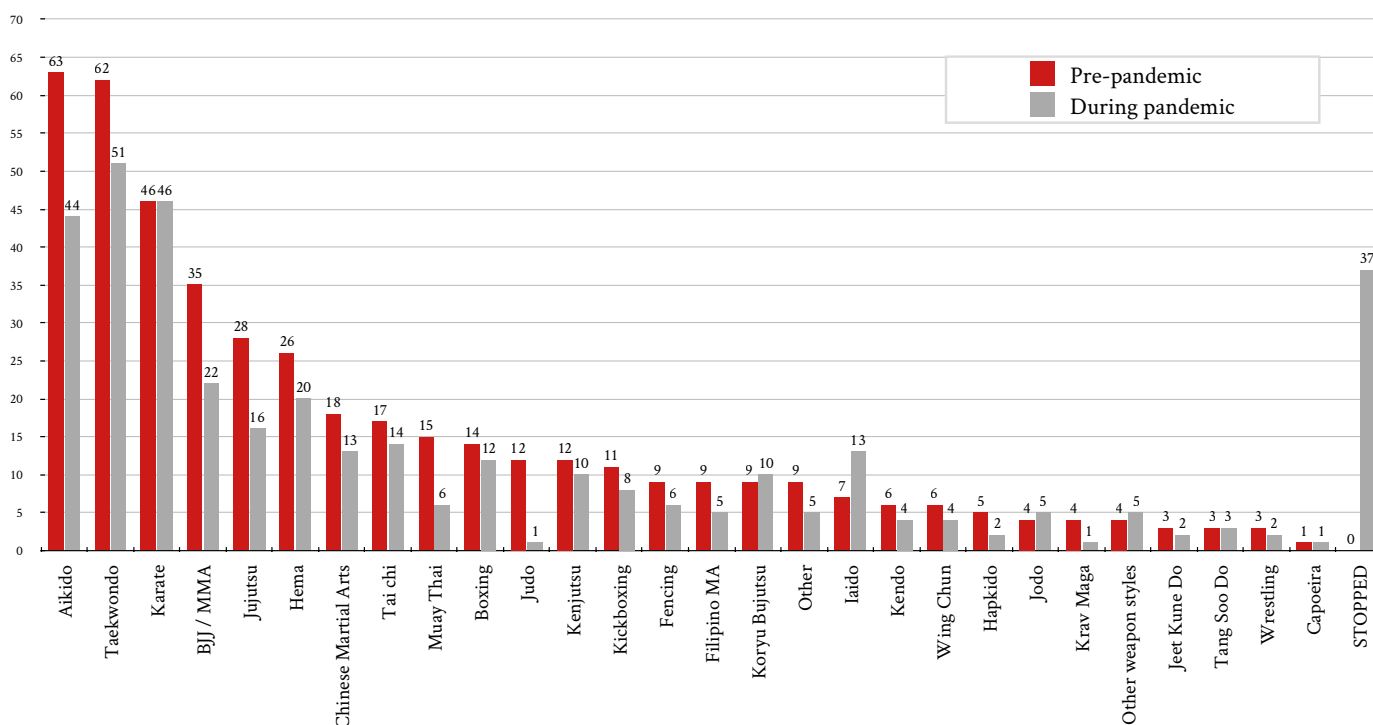
14 'Einige Angebote, wie Online-Seminare und Online-Training über Grenzen hinweg wären auch nach der Pandemie eine schöne Ergänzung.'

16 'Vielleicht eine Mischung. Mehr Ergänzung des regulären Trainings im Gym durch die eigenständige Arbeit außerhalb aber generell eher wie vorher (wenn es das Gym dann noch gibt).'

15 'Ritornereò principalmente a lezioni di gruppo ma la pratica personale rimarrà incrementata.'

17 'Einzeltraining im Park wird bleiben (positiver Effekt der Pandemie), eventuell aber gemeinsam mit Trainingkolleg*innen.'

Figure 13:
Changes in practised styles during restrictions



I'll return, though not to kickboxing, just to BJJ and perhaps switch to another art alongside it like judo or wrestling.

Another three respondents believed that the long-term pandemic effects will prevent them recurring to pre-pandemic martial arts practice.

I expect everything is changed forever.

I don't believe it'll pass, with this government. We'll be in cycles of 2m distancing and lockdown for years, so there's no point thinking of returning.

Long-term effects on martial arts culture

Here also, one third of the study participants preferred not to answer the question. A minority (24 mentions) believed that there will be no long-term effects on post-pandemic martial arts culture at all.

Nothing that can't be fixed

What doesn't kill me makes me stronger.

A further 21 respondents anticipated unspecified general changes. However, the majority of the survey was pessimistic to say the least.

And pardon me if I sound pessimistic, there will be no going back to the old ways. All of us have changed – for those who are alive, the scars vary. I'll go back to the dojo when it re-opens, but I know it will not be same as earlier.

One quarter (50) of the total respondents to this question bemoaned the loss of technical skill and physical fitness due to the training restrictions, with several suspecting they would never return to their former level at all.

I got fat, lazy, and unfit!

It will take a while to get back to where I was before with my training and will delay my going for my 2nd Dan by a year.

Due to the increasing age of the trainees, the level before the restrictions will probably not be reached in some cases.¹⁸

For combatants, this also meant a loss of sparring experience, which would impede their re-entry into the tournament circuit (13 mentions).

[The pandemic] will also introduce 'ring rust' due to the lack of sparring.

Definitely not as fit, will probably not be as resistant to punches/kicks due to lack of exposure.

While a few (7 mentions) fear worse technique as an effect of unmonitored solo training, others (8 mentions) emphasised the raised awareness of the benefits of solo training.

Poor technique due to online training.

[...] the focus on solo play and drills will improve my lifelong practices.

Instructors as well as average practitioners feared a huge loss of training members (40) and permanent shutdowns of martial arts training facilities (20).

My school is suffering financially and I have lost dozens of students.

Gym may have to close which will really make me think twice about ever training again.

Many students at our dojo will probably never return after lockdown. Hopefully many more new students will join. The composition of the dojo community has a direct impact on my practice.

[...] we did lose many students in our kids programs.

Remarkably, an Italian participant believed that the pandemic did not trigger the closures of martial arts clubs, but only accelerated them.

I would like to say that I do not consider the closure of gyms and sports centres dedicated to all contact and combat sports to be a response to the pandemic. That said, it is clear that such closures have desertified these, as well as other, activities.¹⁹

The remarks of several participants emphasise the perception of the pandemic as a caesura in martial arts culture, scarred by losses of personal and knowledge.

Some old masters will pass away. Some reputable dojos will close. [...] Some new dudes are planning with a small team to take over their area with some dynamite new curriculum.

18 'Durch das zunehmende Alter der Trainierenden wird zum Teil das Niveau vor den Einschränkungen wahrscheinlich nicht erreicht werden.'

19 'Premetto di non ritenere la chiusura di palestre e i centri sportivi dedicati a tutti gli sport di contatto e di combattimento una risposta alla pandemia. Ciò detto è chiaro che una chiusura del genere abbia desertificato queste, come altre, attività.'

Older martial arts trainers in particular may get so far out of practice that their training level deteriorates or they have to stop altogether. Also, the training needs to be adapted to the assumed lower level of the participants.²⁰

Somewhat depressed, 11 participants complained about dwindled training motivation.

A loss of interest of less motivated practitioners.²¹

Only mentioned sparsely (8 mentions), but fascinating nonetheless, is the fact that participants worried about the greater likelihood of aversion to physical contact after a long-term social distancing.

I hope we [...] get comfortable with people being close to us again.

Contact training will take a long time to come back and everyone being comfortable with it.

Certainly, the pandemic significantly changed perspectives on martial arts. For some, it produced or amplified an awareness of the importance of martial arts training for their mental health. Although this may relate more to the value of maintaining good physical/exercise habits in general, for some it suggested the potential value of martial arts in terms of therapeutics and public health.

[There are] mainly psychological [effects], due to inactivity and lack of training partners who are also my friends. Also I've lost a routine activity that I enjoyed and that helped me wind off from the troubles of work/personal issues.

I can see how important martial arts is to my wellbeing, and not just my fitness and ability to defend myself.

Bjj helps my mental health so for me I am currently more depressed, making wrong choices more often and generally not caring about myself as much as I should..... these things take a long time to get back.

I don't know if others have experienced it in this way, but I saw myself getting very irritable and agitated. Also emotionally vulnerable to some situations. And I don't know how long these are going to last.

Living and training under restrictions caused many participants to reassess their own relationship to martial arts. It brought about a stronger focus on the individual training progress, a self-motivated acquisition of martial arts knowledge as well as an improved self-discipline to continue the training even without a training partner present.

It gave me a great push in self-improvement.

I had more time to evaluate my goals and practice.

Opening up new perspectives and a good refresher on all the important basics.²²

However, I also am learning so much during lockdown. I feel that I have transformed as a martial artist through quarantine due to all of the opportunities I've had to reflect, get direct input from a range of masters, and perform independent research.

Training has been beneficial for encouraging more self-discipline to train alone, which will help post-lockdown to (will help with consistency of training).

Longterm I think it will even out and not be hugely detrimental. Across the span of time I've been training, a year focussing on solo training, detail and theory, is a fairly minor amount of time but will hopefully add extra depth when normal training resumes.

Undoubtedly, the pandemic gave a huge boost to online training. The forced transition from live group training in clubs and dojos as standard practice to experimental video streams affected nearly all practice characteristics. The methodology spread into synchronous (live) and asynchronous (recorded) online lessons, and the training contents diversified even more into regular martial arts training, fitness routines and theoretical input. It is no wonder that many instructors intend to keep online training sessions.

We may have more zoom classes.

A more diverse training offer becomes possible, including through digital training methods.²³

20 'Insbesondere ältere KuK-Trainer kommen vielleicht so weit aus der Übung, dass das Niveau des Trainings nachlässt oder dass sie ganz aufhören müssen. Auch muss das Training an das zu erwartende niedrigere Niveau der Teilnehmer angepasst werden.'

21 'Una perdita di interesse dei praticanti meno motivati.'

22 'Eröffnen neuer Perspektiven und eine gute Wiederholung aller wichtiger Grundlagen.'

23 'Ein breiteres Trainingsangebot wird möglich, auch durch digitale Trainingsmethoden.'

Study limitations

Before moving into the discussion, the limitations of this study should be pointed out. The mixed-method design and budget constraints inevitably led to a self-selected sample that, due to its complex diversity and the issue of selection biases, does not meet statistical standards for representativeness. Among other possible issues we identify the following. The country affiliation alone is ambiguous, as many professional martial artists train and sometimes settle abroad. Certain states as well as certain martial arts are noticeably overrepresented, and the proportion of martial arts instructors is significantly higher than the real ratio. All of this is an important reminder of the limitations and selection bias that are typically seen with relatively small number online surveys. As such our findings are likely best interpreted as a 'plausibility probe', rather than a definitive scientific statement.

The internationality and multilingualism of the sample also inevitably led to language-sensitive item formulations, which could have led to deviations in the results. This is accompanied by a socialisation-related interpretation of question items, which differs in essential points, for example in the case of the compliance item. The fact that the study team consisted only of the authors for reasons of data protection limited a communicative validation that is otherwise customary in qualitative content analysis. One might also object that the present study relies on respondents to accurately describe their training prior to the start of the pandemic. First of all, this is an issue common to all social research. Secondly, research indicates that self-reporting of value laden behaviours is not always entirely accurate. Still, the overrepresentation of instructors in our sample suggests that these reports may be substantively accurate.

Finally, it is not uncommon in social scientific research to rely initially on self-selected non-representative samples to derive preliminary conclusions on a specific topic. The relevant methodological literature [see for example Gossling et al. 2004] stresses the limitations but also points out the advantages of such research design to conduct time-sensitive, low budget, exploratory studies which might lead to more complex statistically representative surveys and allow for more robust analysis.

DISCUSSION

Speaking about restrictions regarding martial arts practice, we should not and must not forget the terrible impact of the pandemic on humanity as a whole, on the people in the health systems and other system-relevant professions, who are of immeasurable importance to the societies as a whole, but who are unfortunately probably only fully recognised as such in crisis situations. But above all, we must not forget the terrifying casualty figures, whose bare numbers obscure unbearable tragedies. Martial arts is arguably only a marginal and perhaps relatively trivial matter in relation to this global storm of suffering and death. As one of our respondents cogently noted:

We stayed inside a LOT. NYC was a shit show. Ppl were DYING here.

Nevertheless, the pandemic has also initiated and accelerated changes in martial arts that will probably persist long after the crisis has subsided. Remarkably, the two most significant trajectories have to do with the embodiment of martial arts. One of the developments leads us away from bodily interaction, while the other reflects the immense importance of embodiment in martial arts practice.

Digitalisation

Many item responses have already addressed how strategies for digitalising martial arts training and teaching have been invented and implemented in order to replace banned practices in the best possible way. Numerous creative variants of online teaching were used, from YouTube tutorials to live group workshops and individual coaching streams. Indeed, many participants have recognised the benefits of online teaching and intended to combine it with conventional on-site methods of training.

Although certainly more impersonal, online teaching is undoubtedly more accessible and can be more flexibly adapted to the individual training needs and interests of practitioners through online and offline formats.

It also made seminars more accessible. No longer are our 'big' seminars restricted to people who have money to travel across the country.

[...] I have started thinking about how the remote sessions I lead could potentially reach a wide audience if I make them good enough – that was never on the table before.

One study participant rightly suspected that the kaleidoscopic variety of online training formats would inspire the tech industry to provide

equipment beyond the usual home training equipment such as sandbags or training mats.

Increased focus or attention to online market for many martial arts business owners. Tech industry more aware of the needs of the martial arts market. More 'gadgets' created to simulate 'in person' training.

As has already happened in other branches of business and culture, digitisation leads to greater visibility and thus almost always to internationalisation.

More online teaching internationally.

Previous internationalisation processes in martial arts have always been hallmarked by mass media marketing, especially through martial arts and action films (as in such cases kung fu and karate in general, or specific styles such as wing chun, jeet kune do, or Keysi Fighting Method, for example) and broadcasts of competitive events, such as boxing, MMA or judo [Bowman 2010; 2013; 2014; Judkins and Nielson 2015].

However, as it is not nourished by films and broadcasts, but by interactive, flexible, formats for online training in all possible styles, this new wave will not carry one single martial arts style to the forefront, in contrast to earlier forms of the media-dissemination of martial arts.

Also, by expanding their training internationally, instructors are not only compensating for the financial losses caused by the pandemic-related loss of members. They also economise immensely on marketing and publicising their style and their personality.

My teaching has moved to online only including private classes. I now have students across the country and in UK and Taiwan.

This is of particular benefit to rarer styles whose visibility has so far taken a back seat due to the media overload of the more visible systems.

[...] thanks to online training possibilities via Zoom, for example, international groups are increasingly forming and so access to more rare styles and information [is made possible].²⁴

Two other effects of the pandemic restrictions mentioned by study

24 [...] dank der Onlinetrainingmöglichkeiten per Zoom z. B. bilden sich zunehmend internationale Gruppen und so auch der Zugriff auf eher seltene Stile und Informationen [ermöglicht].

participants made this feasible. On the one hand, was the urgency to switch to martial arts styles whose practice was still allowed or most convenient under the restrictions. On the other hand, was the availability of more time and interest to expand one's knowledge of martial arts and to open oneself up to other styles.

I have a broader appreciation of other martial arts as I have studied them during the pandemic. I think I will be a better martial artist because of the lockdown restrictions.

It can be assumed that the diversification and increase in online martial arts content as a result of digitalisation will change the macro-organisational structures in the long term by leading to liberalisation and thus to greater autonomy at the micro level. Remarkable in this regard are the statements of a participant living in New Zealand who saw personal exchange endangered by the pandemic restrictions. He suspected that martial arts styles and organisations develop country-specifically as a result of different degrees of freedom of martial arts practice due to differently successful pandemic control strategies. Here is a selection of his statements, merged together for convenience and conciseness:

The NZ government's quick action to lock down the borders has however meant that since Sept 2020 to date (Feb 2021) we have been able to resume full training locally. The closed borders has however resulted in us cancelling 4 visiting instructor tours to NZ as well as prevented accessing seminars and gasshuku in Canada, Germany & UK in 2020. [...] Before the pandemic I would travel abroad for 8-12 weeks per annum to train. I feel this may not be as feasible especially if countries maintain quarantine requirements. [...] NZ has been extremely isolated globally. Needless to say this has been a game changer that has allowed us to date to navigate the pandemic with far less consequences than most martial arts clubs. In the long term I dare say we will become more independent in training approaches and rely less on international institutions to support our growth. This lack of direct contact with Hombu and Kai members cannot however be positive and will slow our development.

Another participant from the US identified the same problem as he estimated long-term effects.

Maybe more independence. This is not a good thing in koryu.

The two participants obviously regarded the qualitative integrity of their respective martial arts styles as being threatened by more autonomy at the national and micro levels.

We observed similar considerations regarding the competitive martial arts culture. The cancellation of major events due to the pandemic

has led to high-level fighters switching to smaller events that defy the restrictions more easily. Some martial arts tournaments also moved into the illegal sphere. The fact that many fighters of different strengths were concentrated in a few small tournaments will probably lead to a re-sorting of personnel in the upper martial arts leagues after the pandemic.

The extent of the damage done to the combat sports development pipeline is currently unknown. But promoters believe there's no doubt that the lack of bouts happening and scarcity of athletes competing this year – thousands fewer than previous years – will have a chain reaction that stretches from the amateur level all the way to the highest planes of the sport.²⁵

This effect is reinforced by the numerous martial artists who lost competitiveness due to curtailment of training, freedom to travel and interference of personal health.

I believe it will limit the number of training partners able to train martial arts together along with limit the number of competitions/shows for martial arts competitors for a long period of time.

The performance density in the competition circuit will have decreased a lot.²⁶

The pandemic restrictions also cut off many beginner courses which likely will slow down the recruitment of talented junior athletes over the next years. Consequently, the future of the martial arts circuit has been seen in contradictory terms. One participant believed that the proliferation of MMA tournaments on 'Fight Island' near Abu Dhabi has given the UFC a competitive edge.

I think Dana white has performed positively for MMA and the participation numbers will increase.

Another participant polemically rejoiced that the new digital visibility of traditional martial arts could contribute to their renaissance by the acquisition of more earnest practitioners.

25 Source: ESPN network: https://www.espn.com/mma/story/_/id/30056977/how-combat-sports-pipeline-broke-2020. Date Accessed: 10th June 2021.

26 'Die Leistungsdichte im Wettkampfbereich wird stark abgenommen haben.'

The martial arts will change because of this. The popularity of bjj/ mma was waning prior to covid, the pandemic will accelerate this decline. Bjj/ mma had already been following the same arc from fashionable and popular to shit kids activity that karate had already been on. Consumerism and mass participation has never done karate or any martial art any favours, once the kids take over it's game over. [...] Prior to covid kids had – thankfully – been deserting karate classes, they were all off doing bjj/ mma instead. In the post covid era we might see a return to interest in karate from a more serious audience, minus the babysitting.

Holistic embodiment

The study participants' exhaustive creative measures and ideas for maintaining or adapting their individual martial arts training not only illustrate the extraordinary resilience of martial artists. They also illustrate the often central importance that martial arts have in their lives. As mentioned above, it should not be forgotten that the participants in the study had an above-average affinity for martial arts and that more than half of them worked as instructors.

In addition to work-related and financial motives, another motive can also be discerned from many of the item responses. This can be characterised more as an urge and desire to practise martial arts, rather than regarding them as a simple habit [Meyer & Bittmann 2018; 2019]. Undoubtedly, martial arts was more than just a sport for the majority of the participants.

[The pandemic] has made me more conscious of the importance [...] of training is to me.

It is like missing out a part of your life – like memories of a long-lost childhood, ever alive but distant.

The pandemic has not only deprived people of much of their immediate (that is: non-media-based) social interactions. Social deprivation and being trapped in the home offers extremely limited physical movement and corporal contact beyond the closest social circle.

This affected martial artists in particular, for whom the supervision of the body, its reactions to stresses and injuries, and the constant confrontation with their own physicality and that of their fighting opponents is central. Besides the increasing influence of digitalisation, the primacy of physicality in martial arts is the second big tenet of the pandemic. The damage caused by the socialisation of no-contact in the pandemic will, by all accounts, be immense. This implies that embodiment in martial arts is always a social phenomenon. In dialogical combat, bodies interact and communicate – through how and which

fight techniques are performed – about the constant relationship of the fighters to each other, about their bodies and about their environment.

Martial arts practice is a socially embedded community activity. Even with the best of intentions, you cannot practice alone for long unless you are also visiting your dojo on a regular basis. If you're into contact-based martial arts where you require feedback from your partner, your practice definitely suffers.

According to one participant, there is also a philosophical dimension to this comparatively mechanistic understanding.

As a student of the 'traditional' martial arts, I believe the path to self-improvement is by walking the way with others. On your own, you are only left with your ego, and you cease to learn.

The (hopefully) unique period of disembodiment has thus not only shown that, especially in an increasingly digitalised society, the need for embodied impression and expression has not lost its power. It also shows that martial arts are an excellent tool for restoring or improving mental and physical health by constantly recalibrating the unity of body and mind. This insight encourages the implementation of martial arts even more in therapeutic, educational and delinquent contexts. Of course, this also applies to dealing with online formats, as the following commentary shows.

I also think because I suffer with social anxiety, I've found it a lot easier to self motivate without having to deal with seeing other people regularly.

The combination of both effects results in the realisation that online formats can certainly enrich martial arts practice which can also lead to increased interest, but also that direct instruction as well as direct hand-to-hand combat is irreplaceable.

The sustainability of the new routines will depend on my teachers. Will they continue to teach via zoom? The inefficiencies have been revealed. A degree of sparring and partner work is necessary, but not five nights a week. Much can be learned remote, with an adaptive, observant teacher.

CONCLUSION

While not claiming to be statistically representative, the results of our survey carry validity and suggest that the effects of the pandemic on martial practice across the global West have been both profound and complex. In some cases, these events seem to have accelerated market trends (such as the increased importance of digital media within martial arts instruction) that were visible before the start of this public health crisis. In others cases its effects are more counterintuitive and far reaching. By changing the perception of, and desire for, body to body contact among some martial artists, it is likely that the effects of this period will far outlast the immediate public health crisis.

Martial arts are far from the only social or economic sector attempting to adjust to the contours of this new reality. While our survey ended up giving more insights into the lived realities of martial arts *instructors* than martial arts *students*, it is important to remember that the vast majority of martial arts and combat sports practitioners approach their communities as consumers whose access is limited by the constraints of economic logic. Herein lies perhaps the greatest set of unknowns as we contemplate the post-pandemic future of the martial arts: will such people 'come back'? Will parents take their children to martial arts classes in such numbers in the coming months and years?

Furthermore, these practices, like all other choices, come at a certain cost. If employment opportunities, and the economic recovery more generally, stalls in Japan, Europe or North America, the rebuilding of lost schools and diminished styles will likewise be stalled. Indeed, the long-term damage from such a slowdown could actually outweigh the disruption of the pandemic itself.

Alternatively, an economic boom set off by inflationary government policies could create a situation where the opportunity costs of returning to the dojo, gym, class or kwoon is just too high, even among employed individuals. As both wages and prices rise, it is entirely likely that consumers will decide that there are more economically productive ways to spend their weekly leisure hours. (Daniel Amos, in his study of the declining fortunes of Hong Kong's martial arts community has already demonstrated that such seemingly positive economic conditions can have an even greater negative impact on the growth of martial arts communities than economic stagnation [Amos 2021].)

In short, this pandemic has demonstrated that martial practice never exists in a social vacuum, nor it is completely independent from economic forces. It is a useful lens for scholars precisely because it reveals so much about the ways that individuals are impacted by, and attempt to respond to, vast systemic pressures. Fully predicting the future course of martial practice will probably never be possible because the direction of these future trends is, by their very nature,

unpredictable. Yet by opening a window onto the desires and motivations of a transnational group of martial artists, we hope to provide scholars with tools to better understand the challenges which the coming years will certainly bring.

Finally, we would like to extend a sincere note of gratitude to all of those who participated in our survey and shared it with their local martial arts communities. A special note of thanks is also in order to the individuals who assisted us in the translation of this material into several languages. While the current effort has been preliminary in nature, we believe that our results suggest the importance of a transnational focus within the field of martial arts studies. None of that would have been possible with the generous cooperation of so many others.

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