A systematic review on the application of Aikido as a psychosomatic tool in therapeutic setting (Part II)

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Summary
It is our contention that Aikido may have sufficient support for its use in complementary therapies in the field of clinical treatment. However, as far as we are aware, no extensive scientific studies highlighting the application of Aikido as a psychosomatic therapy in the field of psychological behavioural disorders has been carried out. Our aim here was to conduct a systematic review of scientific studies associated with the possible psychosomatic benefits of Aikido practice and to examine whether there is any theoretical basis for this psychosomatic health connection. In terms of methodology, a systematic review of published scientific literature on health and Aikido was conducted in adherence with PRISMA guidelines. Three aspects of the application of Aikido were identified, one corresponding to phases more susceptible to psycho-emotional instability such as during the period of adolescence; another aspect related to the treatment of overcoming trauma in subjects with post-traumatic stress disorder and the final aspect related to the improvements as a result of the practical intervention of mindfulness. It is evident from our review, that the treatment of Aikido as a discipline with psychotherapeutic potential requires further expert analysis from a cross-disciplinary and interdisciplinary perspective, which would involve establishing a suitable intervention model in order to attain a deeper understanding of the discipline of Aikido. Moreover, a mastery of the field of psychology and psychiatry is required to understand the internal cognitive processes of the subjects studied.


Una revisión sistemática sobre la aplicación del Aikido como una herramienta psicosomática en sectores terapéuticos (Parte II)

Resumen
Hasta donde tenemos conocimiento no existe un campo de carácter científico extenso de la aplicación terapéutica de relación psicosomática en el Aikido, en el entorno de los trastornos y afecciones psicológicas del comportamiento. Partimos de la hipótesis de que el Aikido podría tener un respaldo suficiente en su uso en terapias complementarias al ámbito de los tratamientos clínicos. Nuestra finalidad fue realizar una revisión sistemática sobre los estudios de carácter científico asociados a los posibles beneficios psicosomáticos de la práctica del Aikido y comprobar si hay una teoría entre esta conexión de salud psicosomática. Methodológicamente se realizó una revisión sistemática de la literatura científica publicada en materia de salud y Aikido. Para su elaboración se han seguido las directrices de la declaración PRISMA. Se observan tres vertientes de aplicación del Aikido, una correspondiente a fases más susceptibles de inestabilidad psicoemocional como es la adolescencia. Otra vertiente relacionada con el tratamiento de superación de traumas en sujetos con trastorno por estrés postraumático y una última relacionada con la mejora de los aspectos relacionado con la intervención práctica de mindfulness. Se evidencia que el tratamiento del Aikido como una disciplina con potencial psicoterapéutico que requiere de un mayor análisis de expertos desde una perspectiva transdisciplinar e interdisciplinar, que permita encontrar un modelo de intervención idóneo para tener un conocimiento más profundo de la disciplina del Aikido. Además, se requiere un dominio del campo de la psicología y de la psiquiatría que permita entender los procesos cognitivos internos de los sujetos estudiados.
A systematic review on the application of Aikido as a psychosomatic tool in therapeutic setting (Part II)

Discussion

Aikido as a contemporary Martial Art of the 20th century spread to the West when Morhei Ueshiba decided in 1956 to send his disciples to spread his teachings beyond Japan’s borders. This is the case of Mutsuimizu Yoshimitsu Yamada (Tokyo, 1938), Mitsuami Kanai (Manchuhoku, 1938-Toronto, 2004) in the United States, Masamichi Noro (Aomori, 1935 - Paris, 2013) in France and Nobuyoshi Tamura (Osaka, 1933 - Trets, 2010) in Germany. The first bibliographical reference reflecting on the psychotherapeutic benefits of Aikido was written by Saposnek in 1980[29]. Fuller in 1988[5]. The reference carried a note that clinical and psychotherapeutic applications are in an emerging phase and highlights the psychological characteristics of the Art of Aikido considering the possible uses of the principles of this Martial Art as a systemic or indeed, complementary therapy. This view was previously observed during the 1960’s and 1970’s mainly due to the use of Martial Arts in the film industry. The film industry model, spearheaded mainly by Bruce Lee (1940-1973), along with its philosophy and openness to the West on the Zen foundations of the Martial Arts[30], contributed to the distortion in interpreting the spiritual and ethical foundations of the Martial Arts[31].

It was Delva-Tauilli in 1995[32] who wrote the first quasi-experimental article on the benefits of Aikido and this was published in the field of psychology. Although, hitherto, Madenlian in 1979[33] published the first study to analyse a treatment programme involving Aikido on pre-adolescents in a secondary school in Honolulu (Hawaii-USA). More recently, similar research in the field of psychology was carried out by Foster in 1997[34] in Wichita (Kansas-USA), by Lothes II, Hakan, & Kassab in 2013[35] in Wilmington (North Carolina-USA), by Weiss et al. in 2017[36] in Cincinnati (Ohio-USA). It is only very recently that for the first time the interest in Aikido at a scientific level has developed beyond the borders of the USA, and where we find studies, all of which were published in 2019, by Cuellar, Bazán & Araya[37] in San José (Costa Rica), by Szabolcs, Szabo & Koteles[25] in Budapest (Hungary) and by Ben-Soussan et al.[38] in Rome (Italy). From this year of publications, we only find continuity in the team of Szabolcs et al[25] when in 2021 they published an article with the aim of studying aspects such as spirituality, mindfulness, body awareness, and self-compassion in healthy individuals, through Aikido (Table 3).

Possibly the expansion of the influence of Aikido as a Japanese ‘product’ in North America is due not only to the ‘evangelisation’ of Aikido by Morhei Ueshiba’s disciples, but also to the migration of Japanese citizens to the USA, where the island of Hawaii became an intermediate step to reach the North American continent[39].

Still, Aikido as a research practice is also relevant to the somatic domain with a focus on aspects of Mindfulness[40,41,42,43] or flow experience[44] (Table 2). The aspects highlighted in the origin of Buddhism constitute an authentic part of the Zen spirit[45]. This trajectory centred on a type

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Table 2. Descriptive data.

<table>
<thead>
<tr>
<th>Authors (Year)</th>
<th>Title</th>
<th>DOI</th>
<th>Journal</th>
<th>Location*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yumi Akuzawa Foster (1997)</td>
<td>Brief Aikido training versus karate and golf training And university students’ scores on self-esteem, anxiety, and expression of anger</td>
<td>10.2466/pms.1997.84.2.609</td>
<td>Perceptual and Motor Skill</td>
<td>Wichita, Kansas (USA)</td>
</tr>
</tbody>
</table>

*Location of the Research Group from which the interest in carrying out a quasi-experimental analysis on the analysis of psychological variables in Aikido has arisen.
of attitude towards life seems to stand out in the results obtained in relation to the contributions of Aikido to psychological health. There are also more specific clinical applications on aspects that influence the emotional state such as self-esteem as well as the level of anger and anxiety\textsuperscript{23}, or its effect on aggressiveness\textsuperscript{22}. According to Fuller in 1988\textsuperscript{2}, the strategies used in Aikido for the management of certain problematic states such as anger control, could help to provide alternative or additional ways of working with subjects with temper control difficulties. The findings from the use of Aikido as a continuous therapy applied over a period of two years to individuals diagnosed with PTSD\textsuperscript{24}, provide evidence of significant positive effect. In this case the aim was to support symptoms as a whole, because of stress inoculation as a result of PTSD. Hourani et al\textsuperscript{19} previously applied training programmes using Aikido to US military marines in order to acquire emotional management strategies in stressful situations.

In this type of analysis of the psychosomatic relationship in Aikido and its possible benefits as a therapy to help population groups with or without diagnosis, it is complex to draw conclusions about the influence of Aikido on human behaviour. In this sense, it is worth noting first that the creation of specific programmes in order to apply both strategies, resources and teachings of Aikido as we have found in the review conducted was not validated by external experts. Despite this, three research projects\textsuperscript{22,23,24} were considered as particularly significant. These studies are the only ones found in the scientific literature on intervention programmes through Aikido applied to diverse population groups outside the regulated regime of this Martial Art. Our findings show 21 pre-adolescent island boys between 9 and 12 years old\textsuperscript{22}, 98 war veterans, 52 males with an average age of 52.06 + 10.39 and 46 females with an average age of 46.61 + 8.24 (Weiss et al, 2017). And, in a final instance, 12 adults (10 males, 2 females) of varied age range between 18 and 62 years with a mean age of 28.67 +12.43 (Table 3)\textsuperscript{23}. In total since the first publication, 83 subjects (males) and 48 (females) outside the field of Aikido have experimented in their first contact with this discipline to test its effects. In the case of Taulli’s study\textsuperscript{22} where the sample was Pacific Islander pre-adolescents, emotional regulation skills were analysed, that is, giving an appropriate response to the emotions that we experience in each situation; such as, tolerance to frustration, the degree of self-control and in general, the management of aggressive behaviour. Moon\textsuperscript{24} refers to Aikido as a discipline which is suitable for neutralising and integrating the attacker and as having the potential ability to handle physical violence. In other words, it neutralises and harmlessly redirects the attacker’s aggression.

Weiss et al\textsuperscript{24} examined whether Aikido as part of the treatment of war veterans improved symptoms associated with PTSD, such as flashbacks, nightmares, severe distress and uncontrollable thoughts about a witnessed or experienced traumatic situation. In the study by Weiss et al\textsuperscript{24}, the depression factor, a mental as well as an emotional disorder, was treated as a collateral factor of PTSD. With regard to the study of adults in the university population by Cuellar, Bazán & Araya\textsuperscript{25}, the positive changes that were perceived as a result of the practice of Aikido were on mindfulness (psychic and somatic component) and the state of anxiety (Table 4). It is necessary to point out here that Morihie Ueshiba’s philosophy, in its purest form, stems from the psychosomatic relationship of Aikido with the opponent. This philosophy projects a system of interaction between two human beings in which a maxim of his budo, “love reconciliation”, seems to be the essential axis of his work\textsuperscript{26}. This maxim in any case speaks of forgiveness, compassion for the other or self-compassion, as characteristics rooted in both Eastern philosophy and spirituality\textsuperscript{27}. Such was Morihie Ueshiba’s wish, Aikido as a vehicle of protection for the whole world, with love replacing harm and indeed, death\textsuperscript{28}. Accordingly, there is no doubt that this system of interaction in Aikido would embody, as a starting hypothesis, a therapeutic healing effect.

On the other hand, in the context of Aikido schools, we found a study population of 20 initiatives\textsuperscript{29}, where the rank, gender or age of the participants is not specified. Subsequently, Lothes et al\textsuperscript{24} collected data in a first study of a sample of 159 aikidokas belonging to the US territory, distinguishing (111 males and 49 females). Lothes et al\textsuperscript{24}, found 86 subjects below black belt or Kyu ranks, (60 males & 26 females) and 53 with black belt rank (males & females). In a second study they recruited 12 aikidokas (9 males & 3 females) although in both studies they do not specify the age of these participants. Szabolcs et al\textsuperscript{27} meanwhile, recruited 53 adults of mean age 37.2 + 10.56 (45 males & 8 females), of whom 27 subjects were below black belt, and 26 above black belt. Ben-Sousan et al\textsuperscript{24} collected data from 11 adult Aikido practitioners of mean age 47.8 +12.04 (4 males & 7 females) without knowing the rank, nor the years of training. Finally Szabolcs et al\textsuperscript{24} were able to recruit 121 adult aikidokas with a mean age of 37.26 + 10.72 (99 males & 21 females). A total of 247 aikidoka have been questioned since 1997 and 227 since 2013 in the last decade where interest in studying aikidoka personality traits has grown. Most of the studies make a comparison with control groups of the same age not included in the programme\textsuperscript{24}, with healthy people chosen from another field\textsuperscript{24}, or with other practitioners of other sports\textsuperscript{24}. We can observe control groups that are very unbalanced in number with those analysed on the basis of the practice of Aikido, such as that of Lothes Il et al\textsuperscript{24} in their first study.

Regardless of whether the sample of individuals is drawn from practice schools\textsuperscript{22,23,27-29}, or if the training programme was implemented in a different setting than usual\textsuperscript{24,27-28}, the questionnaire tool seems to have facilitated greater consistency in the sample size studied, whether online\textsuperscript{24} or on-site\textsuperscript{27}. In any case, there is an interest in studying the influence on interpersonal psychological behaviour through Aikido as an internal conflict resolution tool. First of all, it can be seen in terms of a phase or stage considered as being particularly conflictive in human beings, such as in adolescence. During adolescence, conflict is considered adaptive, as conflictual interactions have a relational developmental purpose between children and parents\textsuperscript{29}. In the study of Pacific Islander pre-adolescents, the aim is to analyse certain variables of emotional regulation by these children in order to see if they are able to improve them\textsuperscript{27}. Secondly, in a separate study, Aikido is used as part of a treatment for those diagnosed with PTSD, and the association with depression as the most characteristic trait of ex-war veterans\textsuperscript{29} (Table 3).

Internal conflict is the origin of behavioural traits such as low frustration tolerance, high irritability, low inscrutability, poor control of aggression or anxiety and poor management of these states\textsuperscript{24,25,26,28}. These traits are related to a lack of self-esteem and self-confidence\textsuperscript{24} (Table 4). Because Aikido harnesses the natural abilities of being human, it offers an immediate sense of empowerment to beginners, which can enhance
Table 3. Objectives and methodologies.

<table>
<thead>
<tr>
<th>Authors (Year)</th>
<th>Objective</th>
<th>Sample</th>
<th>Design</th>
<th>Intervention*</th>
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<tbody>
<tr>
<td>1 Delva-Tauiliili</td>
<td>To examine whether the practice of Aikido, a non-violent Japanese martial art, effectively reduces aggressive behaviour of preadolescent youth</td>
<td>42 Male Preadolescent Youth, Asian and Pacific Islanders aged 9-12 years (Experimental group: 21 subjects; Control group of 21 subjects on waiting list)</td>
<td>Pre-test and post-test mean scores were performed and compared between the control and experimental groups, before and after 2 weeks of daily training from Monday to Friday</td>
<td>Training on the Basic Principles of Aikido with a methodological structure adapted in the school for preadolescents</td>
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<tr>
<td>2 Foster (1997)</td>
<td>To investigate if Aikido training is effective in improving selected aspects of personality</td>
<td>69 volunteers were university physical education students from Ohio State University and Stanford University. The 4 initiation groups were divided into three modalities: experimental group of 20 Aikido initiates, 24 karate initiates, 13 golf initiates. There was also a control group of 12 golf initiates</td>
<td>Pre-test and post-test of the means of the variables were carried out over a period of 10 weeks of training</td>
<td>Aikido initiation course in the University context</td>
</tr>
<tr>
<td>3 Lothes II, Hakan, &amp; Kassab (2013)</td>
<td>To examine the potential association of training in Aikido may have on mindfulness</td>
<td>179 adult participants over 18 years of age were recruited via email and online. Study I: Experimental group: 159 participants (111 male, 48 female) Aikido students. Control group: 20 participants (4 male, 16 female) psychology students with no martial arts experience. Study II: Experimental group: 12 volunteer Aikido practitioners (3 females, 9 males). Control group: 20 psychology students (13 females, 7 males)</td>
<td>Study I: A cross-sectional data collection for the questionnaires for each subject was carried out online. It took 5 months to collect the 159 surveys and the levels of experience were compared with the ranks acquired and the length of practice experience Study II: Longitudinal design of the experimental group with a control group</td>
<td>Study I: There was no training programme designed ex-profeso within the context of Aikido schools in the USA. Study II: A design was made to insert Mindfulness practices during their Aikido training</td>
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<td>4 Weiss et al. (2017)</td>
<td>To examine the effects of augmenting an evidenced-based residential Posttraumatic Stress Disorder (PTSD) treatment program for veterans with group-based instruction in Aikido</td>
<td>193 Former Vietnam War veterans (108 men/85 women) receiving residential treatment for Post-Traumatic Stress Disorder at a Midwest Veterans Affairs Medical Center. Cognitive processing therapy was part of their primary treatment</td>
<td>Quasi-experimental cohort design with a 7-week follow-up for an overall duration of 52 months. Measurement cohorts were applied to both groups of 85 women and 108 men assigned to practise Aikido and non-Aikido in such programmes</td>
<td>Specially designed programme as complementary therapeutic treatment for war veterans</td>
</tr>
<tr>
<td>5 Cuéllar, Bazán &amp; Araya (2019)</td>
<td>To examine the effect of practising Aikido on mindfulness and anxiety state in university students with no previous experience in martial arts</td>
<td>24 students from the University of Costa Rica. The experimental group consisted of 12 students from different careers (10 males and 2 females; ages 18-62 years); and the control group consisted of 12 students from the Bachelor in Human Movement Sciences (9 males and 3 females; ages 21-34 years)</td>
<td>Quasi-experimental design, with pre- and post-treatment measurements, with one experimental group and one active control group. Implementation programme based on an 11-week training programme (two weekly sessions of 2 hours each).</td>
<td>Specially designed programme in a context outside of Aikido schools</td>
</tr>
<tr>
<td>6 Szabolcs, &amp; Szabo, Köteles (2019)</td>
<td>To examine for the first time the hypothesis that Aikido training, like many other western forms of organised physical activities, has acute psychological benefits as manifested via favourable changes in affect and the flow experience</td>
<td>53 participants were recruited from Aikido clubs of the Aikido Foundation in the metropolitan area of Budapest aged 18-57 years (85% male-15% female), who practised Aikido as a regular recreational activity</td>
<td>Cohort design at least 3 surveys data collections were conducted for one of the variables and another at least 1 time</td>
<td>The programme included the Aikido sports schools’ own training sessions</td>
</tr>
<tr>
<td>7 Ben-Soussan et al. (2019)</td>
<td>To examine the effect of Mindful Movements (MMs–specific types of mind–body coordination-demanding physical activity) on Time Perception (TP)</td>
<td>34 healthy adults volunteered, including 11 practitioners of Aikido (4 males and 7 females) and 9 practitioners of advanced Quadrato Motor Training (4 males and 5 females) and 14 physically inactive controls (7 males and 7 females)</td>
<td>A mixed observational study</td>
<td>There was no specific design. They were collected directly from the Aikido Schools</td>
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(continue)
self-esteem. The interaction systems that incorporate the conflict itself during the confrontation, designs coping strategies according to some authors as a psychotherapeutic model with great healing potential. Aikido has built-in resources and procedures for dealing with adaptive conflict in interpersonal combat with the other. We can describe as an example two types: the techniques called Tai Sabaki, a type of dodging based on moving away from the path of the attack just before impact in order to proceed to use this energy to redirect the conflict. Others, those of psychophysical preparation to face the conflict known as Aiki Taiso, based on breathing techniques and meditation. In this last group, the studies proceed to analyse the effects of Aikido training on psychological or mental variables such as mindfulness, flow experience, skill-challenge harmony, oneness with the experience.

Time Perception Production assesses the importance, experience and beliefs of spiritual connection to an inner power, interpersonal energy, ultimate force, so it measures an aspect of spirituality.

Aikido, fundamentally based on this system of psychosomatic relationship with the other, as described earlier, is not only hypothesised to reduce and help aggressiveness, improve self-confidence or improve anxiety control and management, but seems to also establish a sensitive connection from the earthly to the spiritual and vice-versa. Moon alludes to the words of O’Sensei or Morihei Ueshiba where he explains that victory at the expense of others is not true victory; the benefit lies in order to proceed to use this energy to redirect the conflict. Others, those of psychophysical preparation to face the conflict known as Aiki Taiso, based on breathing techniques and meditation. In this last group, the studies proceed to analyse the effects of Aikido training on psychological or mental variables such as mindfulness, flow experience, skill-challenge harmony, oneness with the experience.

Contrastingly, we observed a lack of homogenisation of the protocols analysed in relation to the analysis of the independent variable, Aikido. The analysis of this Art requires approaching the developed senses of corporeality, embodiment and aesthetic pleasures in a somatic teaching felt by individuals. It is necessary to observe the qualitative aspects of this evidence, in that in many occasions, teaching processes are not taken into account and integrated in understanding of the phenomenon at the individual level in order to experience real transformation. It may be this lack of somatisation as integrated in the foundations established by Morihei Ueshiba that certain factors of emotional regulation have not reflected improvements in the studies of Delva-Tauiliili, Foster, and Lothes et al.

We must not forget that Morihei Ueshiba was a mystic with enlightening experiences like St. John of the Cross in the Christian tradition. Master Ueshiba focused on transmitting generationally using a key concept in Aikido: kimusubi which means “uniting oneself with one’s partner” uniting your own ki with that of the other without fissures. Aikik, “gathering ki”, is similar to ki-musubi but with more emphasis on the momentum and harmonisation of a conflicting force. The essence of Morihei Ueshiba’s work on the transcendence of the human being from the physical interaction of conflict and overcoming it through the Art of Aikido is the basis of healing. The expression ‘loving reconciliation’ is common in his terminology. The influence of Shintoism or Buddhism and even Mikkyo seems to be present in the figure of Morihei Ueshiba. Mikkyo, considered to be the most mystical branch of Buddhism in addition to instruction in the teachings and practices of the tradition, involves and requires “kanjo empowerments” (initiatory power transmissions). Morihei Ueshiba uses ‘transcendence’ as the tool to aid healing. Transcendence was sought by Morihei Ueshiba on the basis that human beings naturally have a creative expansive potential to be developed, where they are capable of states beyond the physical. This is based on subjective perceptual experiences that transcend certain states (hypereos). This concept in the world of arts and dance was interpreted by the choreographer Erick Hawkins, as the need to expand a core concept in movement work: “kinesthetic awareness”. This is defined as the sensation of movement in a somatic connection of muscles, fascia.
Table 4. Variables, scales of measurement and results.

<table>
<thead>
<tr>
<th>Authors (Year)</th>
<th>Psychological, somatic, cognitive and emotional variables</th>
<th>Scales and measures</th>
<th>Relevant results</th>
<th>Conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Delva-Taullili (1995)</td>
<td>Frustration tolerance – Problem behaviours – Self-control – Aggressive behaviour</td>
<td>Teacher's Self-control Rating Scale and on aggressive behaviour – Subscales of the Child Behaviour Rating Scale</td>
<td>No significant differences were found in aggressive behaviour and self-control between the Aikido group and the control group</td>
<td>Methodological limitations such as the lack of randomisation in the groups and the short training time are not sufficient to have a significant effect</td>
</tr>
<tr>
<td>2 Foster (1997)</td>
<td>Self-esteem – State-anxiety – Anger</td>
<td>Self-esteem Scale – State-trait Anxiety Inventory – Anger Expressions Scales from the State-Trait Anger Expression Inventory</td>
<td>No significant differences were found between the pre-test and post-test in the Aikido group in terms of self-esteem, state anxiety, trait anxiety or anger expression. The Karate group showed significantly lower means on trait anxiety, state anxiety and anger expression</td>
<td>The subjects should be observed for several years of training to evaluate changes in test scores</td>
</tr>
<tr>
<td>3 Lothes II, Hakan, &amp; Kassab (2013)</td>
<td>Mindfulness Skills – Mindfulness attention awareness</td>
<td>Kentucky Inventory of Mindfulness – Skills and Mindfulness Attention Awareness Scale</td>
<td>The results of both studies show significant increases in mindfulness scores with Aikido training</td>
<td>This kind of field of knowledge requires longitudinal designs and empirical research to progress further</td>
</tr>
<tr>
<td>4 Weiss et al. (2017)</td>
<td>Posttraumatic Stress Disorder (PTSD) – Depression symptom</td>
<td>PTSD Checklist Stressor Specific Version (PCL-S) – Clinician Administered PTSD-Scale (CAPS) – Beck Depression Inventory: Second Edition (BDI-II)</td>
<td>Female veterans who received Aikido experienced a greater decrease in self-reported PTSD and depression symptoms during treatment. No benefits were found in men</td>
<td>The results of this study are affected by certain limitations such as not using a randomised design, which increases the risk of possible therapist and Aikido instructor effects. Furthermore, a better understanding of the mechanism underlying Aikido needs to be developed to help clinicians</td>
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<tr>
<td>5 Cuéllar, Bazán &amp; Araya (2019)</td>
<td>Mindfulness – Psychic Component (PC) of anxiety – Somatic Component (SC) of anxiety</td>
<td>Mindfulness Attention Awareness Scale (MAAS) – Hamilton Anxiety Scale (HAS)</td>
<td>Positive effects of Aikido practice on mindfulness and anxiety status were evident. Overall, Aikido practice showed significant effects on mindfulness and anxiety PC and a significant and small effect on SC</td>
<td>The results show that practising Aikido, as might be the case with other martial arts, brings a benefit in mood that exceeds that which can be obtained from regular physical activity as part of an active lifestyle</td>
</tr>
<tr>
<td>6 Szabolcs, &amp; Szabo, Köteles (2019)</td>
<td>Flow experience –Skill-challenge harmony –Oneness with the experience. – Positive affect and negative affect</td>
<td>10-item psychometrically validate Hungarian version of the instrument (PANAS-HU) based in The Positive Affect Negative Affect Scale (PANAS) – The Hungarian Flow State Questionnaire (FSQ): derived from several versions of the Flow State Scale (FSS)</td>
<td>The flow experience in aikidokas is similar to aerobic or spinning exercise. More experienced aikidokas reported a higher skill-challenge harmony than less experienced martial artists</td>
<td>These findings reveal relatively clearly for the very first time in the literature that Aikido practice has acute, or immediate, psychological benefits similar to other martial arts and exercises</td>
</tr>
<tr>
<td>7 Ben-Soussan et al. (2019)</td>
<td>Time Production (TP): link bodily perception, human time perception and Mindfulness – Homolateral interlimb coordination – Creativity</td>
<td>TP/Time-production task – Homolateral interlimb coordination task – Creativity Task (Alternate Uses Task)</td>
<td>No differences were found between the Aikido and the control group</td>
<td>Future studies should extend the current results, including a larger sample, several training regimes for interventional testing, and additional neuroscientific measures to investigate the hypothesized neural mechanisms</td>
</tr>
<tr>
<td>8 Szabolcs et al. (2021)</td>
<td>Spirituality – Mindfulness – Body awareness – Self Compassion</td>
<td>The Spiritual Connection Questionnaire (SCQ-14) – Mindful Attention Awareness Scale (MAAS) – 15-item scale – The Body Awareness Questionnaire (BAQ) – The Self-Compassion Scale (SCS)</td>
<td>Generally, higher levels of mindfulness, spirituality, body awareness and self-compassion were found in the Eastern movement forms (Yoga, Aikido and Judo) in contrast to the controls. However, in comparison to Aikido and Judo, Yoga emerged to be the most prominent with respect to the examined four characteristics</td>
<td>Intervention studies are needed to explore the causal relationship(s) between these practices and the variables studied, which may lead to safe recommendations for selecting a specific activity for mental health benefits</td>
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and and tendons with the union of thought (“think-feel”) to reach a state of
“intellectual knowing with sensory experiencing” among other aspects
he incorporated in his somatic trainings the ‘Imagery’ and the influence
also of Zen Buddhism. In this way he developed a method of combining
techniques from this Eastern philosophy with Western science.

The psychosomatic benefits that Mindfulness practices bring
through mindfulness of the present moment draw from a part of
Buddhist philosophy which is deeply rooted in Aikido. In other words,
the quality of Mindfulness improves when this modality of Martial
Art is practiced. However, Szabolcs et al. find that the discipline of
Yoga is more beneficial in relation to mindfulness than Aikido or Judo
when analysing the global factor of well-being in the human being
(Table 4). Therapeutic treatments have been carried out combining
the practice of mindfulness and the theoretical-cognitive application
of the field of psychoneuroimmunendoecrinology, on topics such as
stress, well-being, perception, the importance of emotions in health and
empathy. Psychoneuroimmunology studies those states of abnormal
tension produced by an excess of this afferent neuronal excitation flow.
Although it has been described that there is an individual variability
that seems to be related to specific personality traits as well as to defence
and adaptation mechanisms. The psychoneuroimmunendoecrinic
axis directly reflects the interactions that exist between the psyche,
nervous functions, endocrine and immune responses. Alterations of
stress mediators such as cortisol, as well as local and systemic immune
disorders have been described. For example, continuous stressful si-
tuations affect the balance of this psychoneuroimmunendoecrinic axis,
as in the case of post-traumatic stress syndrome in former combatants
who have survived a war. Aikido seems to have the necessary tools to
align this psychoneuroimmunendoecrinic axis although other disciplines
where there is no confrontational work such as Yoga may embody a
better adaptive response. We must not forget that the martial origin
can generate a certain tension that unless it is released may not have
all the therapeutic potential in its favour.

Fuller in 1988 points out that unlike other arts in which certain skills
can be acquired through practice against an imaginary opponent or an
innimate target, Aikido training is almost exclusively interactive. The
interaction contains a natural set of checks and balances that continually
confront each student with a mirror image of their own behaviour and its
effect on others. Aikido’s principles of fusion and non-deterrence require
students to learn, both literally and metaphorically, to put themselves
in the place of their aggressor in order to see how to resolve the conflict.
Fuller notes that Aikido training requires cooperative rather than
competitive practice, offering the experience of both personal strength
over others and vulnerability at the hands of those same individuals. Its
techniques, which provide a constructive means of resolving disputes
in a harmless manner, inherently demand an empathetic appreciation
of the other person’s position.

This review provides us with a vision of Aikido as a Martial Art
that could be applied as a complementary or alternative treatment to
facilitate the resolution of psychological conflicts or to aid individuals
who find themselves in conflictive moments in critical stages of their
lives. Since the first experimental studies, there have been attempts to
improve the management of emotional skills such as frustration toler-
ance, self-control, anger management, anxiety, aggressive behaviour
and to achieve true self-confidence. The results so far do not support
significant improvements in the application of Aikido programmes as
seen in the studies of Delva-Tauliili and Foster. Possibly, these results
are due to the age of the participants in the pre- and post-adolescent
stage, the small sample sizes of 21 and 69, or perhaps the duration of
the programmes applied, 2.5 and 10 weeks. It is surprising that after
Foster’s study in 1997, Aikido has not been applied again to improve
the management of emotional skills.

In this framework of action, we reflect on Morihei Ueshiba’s Theory
of ‘Loving reconciliation’. This theory is a statement of intent in conflict
resolution. It could be a fundamental justification for applying Aikido in the
framework of intervention to improve emotional skills in early life stages
both pre-adolescence and post-adolescence. But this does not seem to
be the case. It is likely that in the case of Aikido something more is needed.
We post possibly a Theory of conflict release, reflected in the Principle
of Sphericity where the play of two orbital forces make the attacker or
uke role project out of tori’s orbit. That is to say, ‘I’ welcome the conflict,
a union takes place in the void, without an aggressive, harmful or direct
contact but by spiral orbital flow into the surrounding space where finally
both orbits are released without any trauma between adversaries.

The findings from the study of Aikido in Weiss et al., in which
Aikido was used as a combined therapeutic treatment with Cognitive
Processing Therapy (CPT) in ex-military patients from the Vietnam War
(1 November 1955 - 30 April 1975) were exceptional. These individuals
suffered from Post-traumatic Stress Disorder with symptoms of depres-
sion. In this case, even applying 52 weeks of Aikido-based intervention
programme only the symptoms were improved in Females compared to
their control group. Both in the studies of Delva-Tauliili, Foster or
Weiss, alluding to the latter, we understand that a better unders-
standing of the mechanisms underlying Aikido is needed, which would
help to complement actions in patients who are in the process of clinical
treatment or in need of vital well-being.

For this reason, other studies found subsequently: Lothes II, Hakan,
Kassab, 2013; Szabolcs, Szabo & Köteles, 2019; Cuéllar, Bazán & Araya,
2019; Ben-Soussan et al. 2019; y Szabolcs et al. 2021 have mostly
focused directly on aspects of mindfulness, spirituality, self compassion
or flow experience.

Conclusion

As a result of this review we have been able to clarify certain
psychotherapeutic and clinical aspects of Aikido. In the experimental
studies analysed, there is a common denominator based on the sensitive
pair work in the interaction between subjects that enhances the overall
proprioceptive work of the individual, which we believe to be decisive in
the psychosomatic relationship created in Aikido and which heretofore
has remained unacknowledged in bibliographical references.

It is our contention that Aikido has the potential to become a
discipline suitable for application in all facets of mindfulness work.
Furthermore, as a key to the whole systematic review, we highlight the
process of interaction with the opponent and the transformation that
can come to exist if the management of the confrontation is resolved
according to the canons of Aikido and its creator Morihei Ueshiba.
Regardless of the psychological profile of the aikidoka and its field of application, what is essential is to reflect on whether Aikido, as a very sophisticated system in terms of its construction of psychosomatic training techniques, can become useful as a Complementary Therapeutic Treatment in both psychological and psychiatric clinical processes.

If we really know how to control the identical somatic mechanisms originally proposed by Master Morihei Ueshiba in the application of his teaching, we will be able to achieve therapeutic healing. Otherwise, we can consider Aikido as a sports activity or martial work in pairs at the same level as the other modalities, sometimes even below.

Furthermore, a dilemma arises in this analysis based on whether the psychological profile of the practitioner is shaped by the practice of Aikido itself or, on the contrary, whether there is a type of person with certain psychological and personality characteristics who is attracted to this type of discipline.

It is clear that there are limitations to the experimental research found, although it is recognisable that at least some progress has been made since the 1990s.

It is evident that the treatment of Aikido as a discipline with psychotherapeutic potential requires further expert analysis from a transdisciplinary and interdisciplinary perspective to propose an intervention model integrating a profound knowledge of the discipline of Aikido. Additionally, a mastery of the field of psychology and psychiatry is required in order to understand the internal cognitive processes of the subjects studied. For example, it is clear from our review that cross-sectional cohort analyses are not useful in the study of certain emotional variables, but they are useful in the facets and scope of mindfulness.

In the future, longitudinal and qualitatively consistent studies are required in terms of control of the variables that allow the exhaustive follow-up of the subjects in order to fully understand the somato-cognitive processes of the participants themselves in the process of assimilation of the Art of Aikido. The purpose of these processes will be firstly to provide the subjects with practical resources to prevent stressful situations or to face conflicts. And secondly, to help deal with already acquired conflicts in a process of de-traumatisation, de-sensitisation or self-resolution of these conflicts. Proproprioeception is a multidimensional factor that has not yet been scientifically studied as described above among aikidoka. The psychosomatic relationship with the multidirectional analysis of proproprioeception would facilitate the understanding of Morihei Ueshiba’s precepts regarding the sensory-perceptual and motor state of actions among these Aikido practitioners. Future research should further investigate the relationship with aspects of proproprioeception in interaction with perception, somato-cognitive, emotions and verbalisation of processes in pairs.

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Conflict of interest

The authors do not declare a conflict of interest.

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