

DOI 10.31392/NPU-nc.series15.2022.7(152).02
UDK 796.853.24

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THE IMPORTANCE OF STUDYING UKEMI IN AIKIDO AS A WAY OF AVOIDING INJURY

The presented article provides an analysis of one of the key concepts of eastern martial arts – ukemi, i.e. body insurance based on the principle of balance maintaining. The importance of ukemi, as well as its study and the correct performance of technique, is determined in order to preserve the health of aikido athletes, avoid injuries and, as a result, the possibility of continuing a full-fledged practice not only until adulthood, but also until old age.

In the given research there was revealed and characterized the state of physical culture and sports activities of aikido athletes, which is based on the interaction of two partners (uke and nage), who performing different motor actions, in fact both equally take part in practicing a certain technique, movement or throw. The effectiveness of this work depends both on the actions of the nage, and on the readiness of the uke to lose balance, performing appropriate ukemi, in order not only to respond adequately and in time to the reception, but also to restore it quickly enough, demonstrating the readiness to attack and interact with the partner again. It was found that the ability of the uke to relax in time and feel the so-called musubi – a concept that combines both timing and the intuitive feeling of the partner, and not only predicts an adequate reaction to a certain physical impact, that contributes to the better practice of various types of ukemi body insurance. In addition, it has been established that better performance of ukemi is also facilitated by flexibility of the body, which also requires additional training both individually and in pairs. An important aspect is the fact that the technique of performing ukemi remains constant, regardless of the surface on which the body protection is performed. The same constantness must be held whether the uke knows what technique will be performed now, whether the partner is his regular partner, or whether they are working together for the first time, and whether the performed technique is demonstrated with or without a weapon.

Based on their own experience of practicing and teaching aikido, the authors of this article emphasize the importance of learning ukemi in aikido as a primary motor skill that should be learned by an aikidokas, regardless of their age and previous experience in both general physical training and martial arts.

The results of the presented research can be used in preparation for aikido certifications at all levels, as well as during current training in any period of the annual cycle.

Key words: aikido, ukemi, injury, martial arts, body assurance.

Серпутько О., Степанюк С., Малетич Н., Харченко-Баранецька Л. Важливість вивчення укемі в айкідо як способу уникнення травматизму. В статті дано аналіз одного з ключових понять східних одноборств – укемі, тобто страхівка тіла, що базується на принципі збереження рівноваги. Визначено важливе значення укемі, а також його вивчення, та правильної техніки виконання, з метою збереження здоров'я спортсменів айкідо, уникнення травматизму та, як наслідок, можливості продовження повноцінної практики не лише до зрілого, а й до похилого віку.

Розкрито та охарактеризовано стан фізкультурно-спортивної діяльності спортсменів з айкідо, що базується на взаємодії двох партнерів (уке та наге), які, хоч і виконують різні рухові дії, насправді обидва і рівній мірі приймають участь у відпрацюванні певної техніки, чи руху, або ж кидка. І ефективність цієї роботи залежить як від дії наге, так і від готовності уке втратити рівновагу, виконуючи доцільне укемі, аби не тільки адекватно та вчасно зреагувати на прийом, а й швидко відновити її, демонструючи готовність знову атакувати та взаємодіяти з партнером.

Виявлено, що кращому відпрацюванню різних видів страхівки тіла укемі сприяє вміння уке вчасно розслабитися та відчувати так зване мусубі – поняття, що об'єднує і таймінг, і інтуїтивне відчуття партнера, а не лише передбачає адекватну реакцію на певний фізичний вплив. Крім того, встановлено, що кращому виконанню укемі також сприяє гнучкість тіла, яка також потребує додаткового тренування як в індивідуальному, так і в парному режимі. Важливим аспектом вважаємо той факт, що техніка виконання укемі лишається сталою, незалежно від того, на якій поверхні виконується страхівка тіла, чи знає уке, яка техніка зараз буде виконуватися, чи є партнер його постійним напарником, або ж вони працюють разом вперше, а також чи виконувана техніка демонструється зі зброєю, або без неї.

На основі власного досвіду практики та викладання айкідо, автори даної статті наголошують на важливості вивчення укемі в айкідо як першочерговій руховій навичці, якої, в першу чергу, має навчитися айкідока, незалежно від свого віку та попереднього досвіду як загально-фізичної підготовки, так і в бойових мистецтвах.

Результати представленого дослідження можуть використовуватися при підготовці до атестацій з айкідо на всі рівні, а також в ході поточних тренувань в будь-якому періоді річних циклів.

Ключові слова: айкідо, укемі, травматизм, бойові мистецтва, страхівка тіла.

Formulation of the problem. The execution of techniques in aikido involves an attack from uke and one corresponding nage technique, or an appropriate combination of several techniques, after which the attack will be nullified. The choice of technique depends on the strength and speed of the attack, the distance between the partners, timing, the level of skill of both partners, as well as on the features determined by physiological indicators (such as height, weight, gender, etc.). All the techniques are divided into control techniques, the final of which is the execution of a certain pain reception or hold, and throwing techniques, the result of which is a throw performed with the help of the work of the center and the use of the power and energy of the partner's attack. In order for the throw not to be fatal for the uke, he performs the appropriate ukemi, according to the situation, thus preserving not only his life and his own health, but also the ability to continue the attack and, accordingly, the training process.

In classical aikido, it is customary to distinguish three types of ukemi: mae ukemi – forward body insurance, ushiro ukemi – backward body insurance, and yokko ukemi – sideways body insurance. All these types of ukemi, in turn, can be performed at three levels: low – suvuri waza, kneeling position or seidza; middle – ai hiji, when one knee is brought forward and leg rests on the foot, and the other knee touches the tatami; high – tachi waza, standing position.

All types of ukemi, as well as the movement of tai sabaki, need to be studied on the initial level and during all the period of practicing, because the possibility of learning and practicing aikido techniques depends on these movement skills.

In addition, since aikido is not only a martial art, which is the basis of all Budo disciplines, but also a special type of recreational activity, an extremely important aspect of its study is the practical component. It consists not in the application of acquired skills in a duel, but in the ability to resist as to moral and physical pressure, while not openly resisting, but using the power of the enemy, to turn him into your like-minded person. No wonder O'Sensei, Morihei Ueshiba, called aikido "The Art of Peace", that is, the goal of aikido is not to fight, but to find the most peaceful way to solve any issue, without injuries, without disputes and competitions.

For more than a hundred years of its existence and continuous development, aikido ceased to be the cultural property of not only the Japanese people; it absorbed the features of many modern martial arts and gained international status. Aikido today is practiced not only by followers of Budo ideas, but also by amateurs who see this type of physical activity as an opportunity for general physical improvement. Because during Aikido training, all muscles are trained; joints and ligaments are stretched and strengthened; lymph and blood are renewed; the work of the central nervous and cardiovascular systems is improved, the vestibular apparatus is effectively trained, etc. Moreover, the most important aspect in this context is socialization, which guarantees mental and psychological improvement, because through constant close communication and interaction with various partners on the tatami during training, a constant exchange takes place, which promotes relaxation and harmonization of all processes in the body. The result of Aikido training, which involves constant painful effects, is a decrease in the pain threshold, better mastery of one's body, an increase in its supporting functions. Because there is a general hardening at all levels, and, as a result, the gradual mastering of various types and techniques of performing ukemi contributes significantly to reducing the number and degree of injuries both during training and in everyday life.

Thus, the **purpose of research** was to formulate the importance of studying ukemi in aikido as the best way of avoiding injuries.

Materials and methods of research. Despite the fact that from the very beginning of the formation of aikido as a separate discipline both scientific researchers and numerous followers of this martial art have paid attention to the study of ukemi, its importance for the effectiveness of aikido training and as a way of minimizing the injuries, there are still white lines in this matter. That is why this question requires both additional analysis and a narrow approach in the study, which would be based not only on observation of the testimony of Aikido practitioners. The study of this issue requires an understanding and feeling of the effect of ukemi on the body from the inside, based on knowledge of physiology and biomechanics. Our experience in the study of Aikido, as well as many years of practice as an instructor of children, teenagers and adults, including preparation for attestations at the kyu and dan levels, as well as knowledge from the above-mentioned fields of science make it possible to conduct such a study.

Among foreign researchers, this topic is quite popular, but mostly ukemi as a means of avoiding injuries is studied in the context of sports that involve a competitive system, such as judo, karate, jiu-jitsu, hand-to-hand combat, jiu-jitsu combat, taekwondo, etc. Among the most striking works of the last years, one can single out the following: D. Boguszewski, K. Kerbaum, B. Suchcicka, J. Grzegorz Adamczyk (2011-2013) [1, 2], M. N. Zetarak, M. A. Violan, D. J. Zurakowski (2005) [10]. With regard to domestic research, the topic of aikido is actively considered in the works of such Ukrainian authors as O.G. Shalar (2020, 2021), E.A. Strikalenko (2019, 2020, 2021), S.I. Stepanyuk, O.K. Serputko (2022) [5, 6, 7].

In order to solve the tasks, we used the following methods of research: analysis of literature sources, theoretical analysis and generalization of scientific data, as well as our own experience of aikido practice and teaching.

Presentation of the main material of the study. "Ukemi" as a compound word literally means something like "receiving body". In martial arts "ukemi" means "the art of falling safely" [3].

In Aikido training, a similar exchange of energy takes place; not just between bodies and minds but perhaps at a deeper level, between one consciousness and another. The deeper exchange is made possible by a practice called Ukemi. In ukemi, we intentionally suspend our innate self-defense mechanism, consciously adjust our body, and mind to allow the other participant to express himself fully without harming anyone. Ukemi creates a safe flow of energy that allows both participants in an Aikido technique to continue their harmonious interaction through the conclusion of the technique [8].

The three key phases of good ukemi can be discerned from the description of uke's role: connect, stay safely connected, escape. When nage performs some technic on uke, he grabs his hand and wrist, aligning his body to effective connection of his center to his arm, and attempts to find his center to pin him to the mat. If he has not yet mastered the technique, he may resort to an improper shortcut, which consists of applying force to twist his wrist and subdue him through wrist pain. If uke lets this happen every time, the nage will miss the opportunity to learn the proper technique. To help nage channel his energy properly, uke should align his body to receive the technique such that the nage can feel that the technique has worked, i.e., he has successfully connected with his center and is in a position to pin him down [4].

A most crucial qualitative attribute of uke is his willingness to receive the technique without reservation; i.e., the prerequisite for good ukemi is the ability to be open and vulnerable and accept a risk of injury. If this openness is not present, certain parts of the body will be closed and resist the oncoming energy rather than cooperate, resulting in an incomplete ukemi. In this respect, keeping an open mind and a flexible body is extremely helpful.

Connecting to nage also means providing a focused "attack" on cue. A good uke is always alert, with his sensors out for constant scanning the surrounding, including nage's energy. To begin the technique, nage initiates a movement toward uke or creates an opening by presenting a vulnerable part. These are the cues that uke must catch and respond to timely.

While shifting and realigning his body to receive the technique, it is critical that uke protects himself by maintaining the integrity of his body. Toward this end, he must assess and absorb the impact of the technique by bringing to bear all available resources: he must muster the help of all body parts that can move to distribute the impact widely. Additionally, he must stay aligned with gravity by keeping his central axis vertical to the extent possible [8].

Aligning his center timely means that he needs to move his entire body at the right time to receive the technique. If he receives late, he may be injured because his wrist will endure the most of the oncoming force without support from the rest of the body. Conversely, if he yields too early, the nage will not feel the connection and his body will not register the technique correctly. Uke should receive by moving his body such that the pressure on his wrist remains constant. He should tap out only when he can make no further movement to absorb the oncoming energy. This is exactly when nage has effectively pinned him down. Awareness, suppleness and sensitiveness are critical attributes in this phase of ukemi [10].

The instant right before the escape presents the most risk to uke. Nage should have the intent to cut off any escape with an abrupt and violent move – taking advantage of uke's willing openness – then injury probably results.

During the engagement, the uke deliberately helps his training partner complete the technique by accepting the risk of exposing his vulnerability. He gives him a focused and sincere attack, knowing that he is going to execute a technique on him, and that there is a risk that he may not be doing it correctly, thus potentially hurting partner in the process. Good ukemi entails effort and risk. Therefore, participants should have a high degree of trust in each other in order to do good Aikido. On the other side, the partners should also take full responsibility for protecting themselves and each other during the interaction, and not readily assign blame in case of accidental injury.

Results of the research. According to the recent studies, the practice of ukemi is accompanied by the active release of serotonin in large quantities, which manifests itself as a feeling of joy and satisfaction from the process [2]. Thus, performing ukemi helps to relax, improves the general atmosphere on the tatami, helps to establish friendly and partnership relations between uke and nage and between sensei and practitioners. Satisfaction from the training process contributes to better concentration and easier and more natural flow of intellectual load during aikido classes.

There is a proven improvement in physical development during ukemi practice, which is extremely beneficial for increasing strength, endurance and flexibility. With a gradual increase in the intensity of ukemi training, it hardens the body in such a way that body protection even from an unfamiliar technique or done in a new performance is produced automatically, without any damage to the athlete [9].

Moreover, if we are talking about a high-level aikidoka, ukemi itself becomes a condition not only for self-defense, it makes performing a kaeshi waza, i.e. counterattack, possible in case the nage made a mistake, or the level of performing uke is higher than the level of the nage. It is also worth emphasizing the decisive role of ukemi when working in the free technique of ju waza, when various attacks and sharp throws are performed in a creative manner, which is also recommended for development at an advanced level [4].

Conclusions/ discussion. Thus, although the performance of ukemi is the prerogative of the uke, nevertheless, the form, speed and safety of the ukemi will always depend on the performance of the nage. Based on the results of this research, which was based on the statement that learning ukemi is an important condition for minimizing and avoiding injuries both when performing aikido techniques and in everyday life outside the tatami, we reached the following conclusions.

1. Effective ukemi cannot be planned. The uke should be sufficiently relaxed and move in the direction given by the nage, at the same time the body should not lose energy and tone in order to quickly respond to the change in the level of execution of the technique and interact with the floor surface. The same applies to uke thoughts, active visualization of the desired ukemi slows down the movements, which makes them unnatural and can not only inhibit the learning of the technique, but also cause micro-injuries, muscle and ligament tears, hits on the surface, etc.

2. An important component of practicing ukemi is "merging" with the partner's actions. Uke must not only continue the nage's moves without blocking them, but also anticipate them.

3. An important condition for correct ukemi is the absence of psychological blocks, the ability to make concessions to your partner, the understanding that only by helping each other, i.e. by giving the opportunity to perform this or that movement, both of them will be able to learn.

Thus, the prevention of injuries in aikido should be a conscious choice of both partners, and this applies both to classes in the dojo and to everyday life, solving any conflict or problematic issues. The construction of any values or the

formation of valuable skills involves overcoming difficulties, and this is the main principle of ukemi – to overcome obstacles while maintaining the flexibility and openness of the mind, because it is our mental attitude that dictates the behavior of the body.

Performing ukemi allows you to feel more deeply the correctness of the technique through the body, much deeper than the instructor can explain in words or demonstrate in a visual way. So working on a high level of ukemi is the shortest path to mastering the art of Aikido.

As a direction for further research on this topic, we see the study of the effect of high-amplitude ukemi (tobi ukemi) on the body of aikido athletes of various ages, especially of the second period of adulthood, as well as the development of effective methods of teaching ukemi in order to more easily mastering the principles of aikido.

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DOI 10.31392/NPU-nc.series15.2022.7(152).03

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THE INFLUENCE OF PHYSICAL EDUCATION CLASSES ON THE FORMATION OF MORAL-VOLUNTARY QUALITIES OF HIGHER EDUCATION ACQUIRES

The article analyzes the specifics of the influence of physical education classes on the formation and development of moral and volitional qualities of student youth. The relationship between the development of moral and volitional qualities and the physical development of modern youth has been established.

The influence of physical exercises and physical culture mass work on physical development, education of moral and volitional qualities of students of higher education is determined. The content of moral and volitional qualities and their importance in the process of solving educational tasks are revealed.

In addition, many years of scientific research prove that physical education classes have a positive effect not only on the development of moral and willpower, but also on improving the health of those who practice.

Key words: *students of higher education, physical education, physical exercises, moral and volitional qualities.*

Сога С., Добровольський В., Михайленко В. Вплив занять з фізичного виховання на формування морально-вольових якостей здобувачів вищої освіти. *В статті проаналізовано особливості впливу занять з фізичного виховання на формування та розвиток морально-вольових якостей студентської молоді. Встановлено взаємозв'язок розвитку морально-вольових якостей з фізичним розвитком сучасної молоді.*

Визначено вплив занять фізичними вправами та фізкультурно-масовою роботою щодо фізичного розвитку, виховання морально-вольових якостей здобувачів вищої освіти. Розкрито зміст морально-вольових якостей та їх важливість у процесі вирішення освітніх завдань.

Крім того, багаторічні наукові дослідження доводять, що заняття з фізичного виховання позитивно