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# KNOWLEDGE, ATTITUDE AND PRACTICES ADOPTED BY RECREATIONAL RUNNERS TOWARDS CORE STABILITY EXERCISES IN PREVENTING LOW BACK PAIN: A CROSS-SECTIONAL STUDY

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**Abstract**

**Background.** Core stability and good running mechanics are fundamental components required for running, including those running for leisure with or without a competitive aspect. Thus, adequate knowledge, attitude, and practice (KAP) of core stability exercises (CSE) are necessary to minimize the incidence of low back pain (LBP). Therefore, this study intended to determine recreational runners' KAP toward CSE to prevent LBP and reveal the association between their demographic characteristics and levels of practice toward CSE.

**Materials and methods.** A cross-sectional study design was adopted, and three hundred recreational runners were selected using a simple random sampling approach. A semi-structured questionnaire was distributed among them using Google Forms. It consisted of 28 items capturing the participants' demographic characteristics and KAP toward CSE. Out of 300, 257 completed questionnaires were received, indicating an 86% of response rate. Data analysis was carried out using Statistical Package for the Social Science (SPSS) 28.0.

**Results.** The correct response to the knowledge-related items in the questionnaire was from 65% to 91%. Precisely, 91.4% of study participants understood CSE. Furthermore, most participants showed a positive attitude toward CSE, considering that it is essential for running (79%), improving fitness (76%), reducing the risk of injuries (71%), and boosting their appearance (54%). Most participants (>85%) performed CSE for recommended frequency and duration to strengthen their core muscles and prevent LBP. The recreational runners had good practice toward CSE.

**Conclusions.** Recreational runners possess adequate knowledge, a positive attitude, and good practice toward CSE. This study suggested that motivational strategies and awareness programs can be conducted to improve recreational runners' KAP toward CSE preventing LBP.

**Keywords:** knowledge, attitude, practice, core muscles, runners, exercise, low back pain.

## Introduction

Running is among the most popular types of exercise and physical activity in individuals who engage in vigorous-intensity physical activity (Dai et al., 2015). Furthermore, in terms of participation, running is one of the most popular workout activities on the planet (Lee et al., 2014; Scheerder et al., 2015). Running's popularity is most likely owing to its health benefits (Hespanhol Junior et al., 2015). A recreational runner was defined as someone who had been running for at least six months and had completed 1 to 3 weekly sessions (Mulvad et al., 2018). Runners report changes in

their lifestyles after starting to run regularly, including better eating habits, good sleeping patterns, and less alcohol and tobacco consumption. They also say jogging makes them happier, more relaxed, and more energized (Harris, 1981; Novacheck, 1998). The health benefits of running are well recognized, as seen by the growing popularity of recreational running events in several locales across Western civilization (Franke et al., 2019). Despite the advantages of running, the amount of documented running injuries in the literature is concerning (Van der Worp et al., 2015). According to existing research, running-related injuries mostly impact the joints of the lower leg, pelvis, and lumbar spine, causing uncomfortable muscles, tendons, joints, and low back pain (LBP) (Dias Lopes et al., 2012). Similarly, many runners suffer from LBP due to poor knowledge and awareness of body mechanics. As such, LBP accounts for roughly 20 to 30 percent of typical complaints among runners (Abdelraouf & Abdel-Aziem, 2016; Maselli et al., 2020).

The stability of core muscles is essential to running-related back injuries. The deep core muscles have been shown to activate before voluntary lower extremity movement, implying that they may act to stabilize the spine in preparation for the loads encountered during dynamic tasks such as running (Fredericson & Moore, 2005). The superficial muscles' primary role is to move the thoracic cage and pelvis and deliver forces to the extremities (Bergmark, 1989). During running, the total axial pressure on the lumbar spine exceeds three times the upper body's weight above the fifth lumbar segment (Cappozzo, 1983). Likewise, during a repetitive, dynamic activity like running, dysfunction of the deep core musculature can result in improper loading of the spine, poor muscular coordination, compensatory movement patterns, muscle tension, or injury to spinal structures (Hibbs et al., 2008). A suitable amount of deep core muscular activation is required to support the spine; nevertheless, excessive or inappropriate activation of these muscles may result in aberrant spinal loading and LBP (McGregor & Hukins, 2009). When the deep core muscles are weak, the lumbar spine is subjected to higher compressive and shear loads. The superficial trunk muscles are shown to be the major compensators, indicating that these muscles are at the most significant risk of injury or fatigue. Hence, runners with deep core muscle weakness may be at a higher risk of developing LBP (Raabe & Chaudhari, 2018).

In runners, core stability exercise (CSE) enhances core stability while positively impacting running performance (Hsu et al., 2018; Mehda et al., 2019). Previous studies have demonstrated that six weeks of core-stability training in school track and field athletes improved dynamic balance, core endurance, dynamic postural control, and running economy (Bagherian et al., 2019; Sandrey & Mitzel, 2013). To gain the full benefits of CSE, the amount of knowledge the runners have and their attitude towards it is paramount. Knowledge plays a vital role in influencing individuals' positive attitudes toward exercise. Individuals with a higher understanding of sports injury prevention and management had a more favorable attitude toward injury prevention and management tactics (K.-M. Wang et al., 2012). However, exploring the literature, no prior studies have been conducted to bring out runners' knowledge and attitudes regarding the significance of CSE and their practices to prevent LBP. Thus, this study intended to assess the knowledge (understanding), attitude, and practice (KAP) adopted by recreational runners towards CSE in reducing the risk of LBP. It also focused on exploring the association between the recreational runners' demographic characteristics and their levels of practice concerning CSE.

## Materials and Methods

### *Study design*

A cross-sectional study design was adopted to reveal recreational runners' KAP towards CSE belonging to Selangor state, Malaysia. This study was conducted between January 2021 and March 2021. The ethical clearance for this study was obtained from the Research and Ethics committee of INTI International University, Malaysia (INTI-IU/FHLS-RC/BPHTI/7NY12020/009). Participants are mandated to complete the informed consent form before starting the survey.

### *Participants*

Considering the population size of recreational runners belonging to various running clubs of Selangor state, confidence level (95%), and acceptable margin of error (5%), a sample size of 300 recreational runners was selected using simple random sampling methods. Of the 300 questionnaires administered, 257 completed questionnaires were returned, demonstrating an 86% response rate. The participants include both gender with ages ranging from 18 to 65 years and have been running for the last six months. Competitive runners and individuals who were unable to read and understand English were excluded from the study.

### *Instrumentation*

A semi-structured questionnaire was developed and consisted of four sections (28 items). The questionnaire's first section deals with the recreational runners' demographic information (07 items). The second section addresses the recreational runners' knowledge of CSE by counting the correctness of their responses to each item using either 'True' or 'False or 'Not Sure' (07 items). The third section covers the recreational runners' attitude toward CSE through the options of a five-point Likert scale [Strongly Disagree', 'Disagree', 'Neutral', 'Agree', and 'Strongly Agree']. All attitude-related items were structured as direct-worded questions except those capturing the runners' attitude toward exhaustion and motivation, availability of time to do CSE, significance/helpfulness, and knowledge about CSE, which were considered reverse-worded items. The last section reveals the recreational runners' practice toward CSE through the options, i.e., 'Yes', 'Sometimes', or 'No' (05 items).

### *Procedure*

Before administering to the subjects, the content validity of the questionnaire was carried out through experts' judgments. The questionnaire was distributed to participants using 'Google forms. A survey link, along with the objective of conducting the survey, was sent to all those recreational runners belonging to various running clubs;

poll links were shared on club-specific social media pages, and responses were collected. All participants were asked to respond after filling out the informed consent form. The collected questionnaires were checked for accuracy and completeness.

The recreational runners' knowledge of CSE was measured based on the overall number of points they received. One point would be awarded for choosing "true" for the statements. The options of 'false' and 'not sure' would be considered zero points. Precisely, responses for each attitude-related item were measured as the frequency and percentage of those who opted for 'Strongly Agree' and 'Agree' concerning direct-worded items and 'Neutral', 'Strongly disagree', and 'Disagree' concerning reverse-worded items. In focus on revealing the recreational runners' practice of CSE, the responses on each practice-related item were described in frequency and percentage of those who opted for 'Yes' (1 point), 'No' (0 points), or 'Sometimes' (0 points). The total score ranged from 0 to 5, in which a score of 4-5 denotes good practice concerning CSE. However, a score of 1-3 means poor practice concerning CSE.

### *Statistical analysis*

Statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS) version 28.0. The recreational runners' KAP toward CSE were analyzed using descriptive statistics (i.e., frequency and percentage). Since the demographic characteristics consist of body mass index (BMI), age, education level, running experience, the incidence of LBP, and its duration and the response of the subjects to the practice-related items in the questionnaire are captured and reported in the form of categories, a Chi-square test was applied to examine the association between the participants' characteristics and their practice concerning CSE at 5% significance level. The chi-square test is a nonparametric test used to test the hypothesis of no association between two or more groups, populations, or criteria (i.e., to check independence between two variables), and it is meant explicitly to categorical data, not for analyzing parametric or continuous data (Singhal & Rana, 2015)

## Results

### *Demographics of participating runners*

Among the participants (n=257), half of them were female (52.9%), aged between 18 and 30 years (52.1%), and observed under normal BMI (51.8%). 75.5% possess an undergraduate degree as their highest education level. 35.8% had a recreational running experience between 6 months and 2 years. Besides, only 28.8% were currently suffering from LBP, and 13.2% had a history of LBP for 1 to 2 years (Table 1).

**Table 1.** Demographic characteristics of participants

| Characteristics | | Frequency (n) | Percentage (%) |
|---|---|---|---|
| Gender | Male | 121 | 47.1 |
| | Female | 136 | 52.9 |
| Age (Years) | 18 to 30 | 134 | 52.1 |
| | 31 to 50 | 92 | 35.8 |
| | 51 to 65 | 31 | 12.1 |
| BMI (kg/m$^2$) | Underweight (<18.5) | 15 | 5.8 |
| | Normal (18.5-22.9) | 133 | 51.8 |
| | Overweight (23-24.9) | 48 | 18.7 |
| | Obese 1 (25-29.9) | 50 | 19.5 |
| | Obese 2 (>30) | 11 | 4.3 |
| Education Level | Secondary Education | 14 | 5.4 |
| | Diploma | 22 | 8.6 |
| | Bachelor Degree | 194 | 75.5 |
| | Master Degree | 27 | 10.5 |
| Recreational Running Experience (Years) | 6 months to 2 | 92 | 35.8 |
| | 3 to 5 | 70 | 27.2 |
| | 6 to 10 | 47 | 18.3 |
| | More than 10 | 48 | 18.7 |
| Suffer from LBP | Yes | 74 | 28.8 |
| | No | 183 | 71.2 |
| History of LBP (Years) | 1 to 2 | 31 | 13.2 |
| | 3 to 5 | 28 | 10.9 |
| | > 5 | 15 | 5.8 |

LBP= low back pain, CSE= core stability exercise, BMI= body mass index

**Table 2.** Recreational runners' knowledge of CSE

| Knowledge items | Correctness of Response | |
|---|---|---|
| | True n (%) | False/Not sure n (%) |
| CSE improves running economy | 175 (68.1) | 82(31.9) |
| CSE is necessary for good running mechanics | 206 (80.2) | 51 (19.8) |
| Core muscles play a vital role in controlling and influencing the body's movements | 235 (91.4) | 22 (8.6) |
| Trunk rotation and load transfer are the primary functions of the core | 167 (65.0) | 90 (35.0) |
| Exercises like crunches and sit-ups are insufficient to develop the core | 199 (77.4) | 58 (22.6) |
| CSE involves training the body's posture through complex and dynamic movements | 229 (89.1) | 28 (10.9) |
| CSE reduces the risk of LBP | 223 (86.8) | 34 (13.2) |

LBP= low back pain, CSE= core stability exercise

### *Recreational runners' knowledge about the CSE*

91.4% of participants agreed that the core muscles play a vital role in controlling and influencing the body's movements. 65% knew the primary function of the core muscles. 89.1% of the respondents identified that core stability trained the body's posture through complex and dynamic activities and agreed that CSE is necessary for good running mechanics. Furthermore, 68.1% reported that it improves the running economy. 77.4% stated that crunches and sit-ups are insufficient to develop the core. Moreover,

86.8% possess sufficient knowledge that regular practice of CSE reduces the risk of LBP (Table 2).

*Recreational runners' attitude towards CSE*

More than 70% of the participants agreed that CSE is vital for running, improves their fitness level, and reduces the risk of back injury. Half of the participants (53.7%) perceived that CSE boosts their appearance. Notably, 32.7% reported on lack of time to do CSE. 37% felt a lack of motivation and fatigue from not exercising regularly. Besides, 89% disagreed that practicing CSE does not provide a significant result and could be more helpful. 72% perceived that the lack of knowledge did not justify skipping the exercise (Table 3).

**Table 3.** Recreational runners' attitude towards CSE

| Attitude items | Correctness of Response | |
|---|---|---|
| | Runners opted for Strongly agree and Agree n (%) | Runners opted for Neutral, Disagree, and Strongly Disagree n (%) |
| CSE is essential for running | 202 (78.6%) | 55 (22.4%) |
| Other athletes are doing CSE | 102 (39.7%) | 155 (60.3%) |
| CSE improves fitness level | 194 (75.5%) | 63 (24.5%) |
| CSE reduces the risk of back injury | 182 (70.8%) | 75 (29.2%) |
| CSE boosts my appearance | 138 (53.7%) | 119 (40.3%) |
| Lack of time to do CSE | 84 (32.7%) | 173 (67.3%) |
| Lack of motivation or too exhausted to do CSE | 95 (37%) | 162 (63%) |
| It is not significant or helpful | 27 (20.5%) | 230 (89.5%) |
| Lack of knowledge about CSE | 72 (28%) | 185 (72%) |

CSE= core stability exercise

*Recreational runners' practice toward CSE*

Most participants (>90%) performed CSE in a slow and controlled manner and those stopped doing CSE if it aggravated their LBP. Above 85% performed CSE for recommended frequency and duration to strengthen their core muscles and prevent LBP. Those also reported no practice of holding their breath while performing CSE (Table 4). Furthermore, all demographic variables except the education level are significantly associated with the practice of CSE among recreational runners (Table 5).

## Discussion

Core muscles can be classified into local and global stabilization systems. These systems provide core stabilization in terms of strength and balance to body parts during sports activities (Bergmark, 1989). In this study, most participants (91.4%) understood that core muscles play a vital role in controlling and influencing body movements. 65% knew the core muscles' primary function. Likewise, 80% recognized that CSE is necessary for good running mechanics. 68.1% reported that it improves the running economy. Such findings conformed with an earlier study that stated that CSE might improve male college athletes' static balance, core endurance, and running economy (Hung et al., 2019). Further, 89.1% agreed that CSE involves training the body's posture through complex and dynamic movements. Several studies have also proved that the core muscles aid in stabilizing the lumbar spine and postural maintenance (Hides et al., 1996; Hodges et al., 2007; Kibler et al., 2006). Szczygieł et al. demonstrated that four weeks of core deep muscle training helps to improve posture, particularly trunk postural control in the sagittal plane (Szczygieł et al., 2018). In summary, the current study implies that recreational runners possess sufficient knowledge about CSE.

Earlier studies demonstrated that CSE minimizes pain in the short term for patients with chronic LBP and is most commonly used during clinical practice (Shamsi et al., 2016; X.-Q. Wang et al., 2012). Other studies also proved that core muscle training helps reduce the risk of LBP and alleviates chronic LBP (Akbari et al., 2008; Andrusaitis et al., 2011; França et al., 2010). As such, most participants (86%) believed that CSE reduces the risk of LBP. This condition might be because CSE helps to improve core muscle strength and thus reduces the risk of LBP. The core muscles decrease such injury risk in the low back area by sustaining force control during mobilizing (Liemohn et al., 2005). Additionally, incorporating core muscle training into a daily routine can enhance core muscular strength, decrease the incidence of back pain injuries, and enhance sports performance (Hibbs et al., 2008).

In this study, the recreational runners demonstrated a positive attitude toward CSE, where 78% felt that it is essential for running. A systematic review and meta-analysis of the relationship between core strength training, core muscle strength, and athlete performance found that CSE improved core muscle strength but had a limited impact on athletic performance (Prieske et al., 2016; Reed et al., 2012). However, in this study, above 75% of the participants agreed that CSE improved their fitness level, and it is in conformance with an earlier study by Hung et al. in which core muscle training has commonly been employed in rehabilitation as well as improving fitness.

**Table 4.** Recreational runners' practice toward CSE

| Practice items | Yes n (%) | Sometimes n (%) | No n (%) |
|---|---|---|---|
| I perform/practice CSE for recommended frequency and duration | 226 (87.9%) | 30 (11.7%) | 1 (0.4%) |
| I perform CSE to strengthen the core muscles and prevent LBP | 227 (88.3%) | 29 (11.3%) | 1 (0.4%) |
| I stop performing CSE if it aggravates my LBP | 241 (93.8%) | 16 (6.2%) | 0 (0%) |
| I do not hold my breath while performing CSE | 229 (89.1%) | 24 (9.3%) | 4 (1.6%) |
| I perform CSE in a slow and controlled manner | 235 (91.4%) | 21 (8.2%) | 1 (0.4%) |

LBP= low back pain, CSE= core stability exercise

**Table 5.** Association between recreational runners' characteristics and their practice toward CSE

| Demographic characteristics | | Total | Poor | Good | Chi-square (p-value) |
|---|---|---|---|---|---|
| | | N (%) | N (%) | N (%) | |
| Gender | Male | 121 (47.1) | 11 (34.3) | 110 (48.9) | 5.369 (0.002)* |
| | Female | 136 (52.9) | 21 (65.6) | 115 (51.5) | |
| Age (years) | 18 to 30 | 134 (52.1) | 17 (53.1) | 117 (52.0) | 4.268 (0.009)* |
| | 31 to 50 | 92 (35.8) | 13 (40.6) | 79 (35.1) | |
| | 51 to 65 | 31 (12.1) | 2 (6.2) | 29 (12.9) | |
| BMI (kg/m$^2$) | Underweight (<18.5) | 15 (5.8) | 4 (12.5) | 11 (4.9) | 9.002 (0.000)* |
| | Normal (18.5-22.9) | 133 (51.8) | 21 (65.6) | 112 (49.8) | |
| | Overweight (23-24.9) | 48 (18.7) | 2 (6.2) | 46 (20.4) | |
| | Obese 1 (25-29.9) | 50 (19.5) | 5 (15.6) | 45 (20) | |
| | Obese 2 (>30) | 11 (4.3) | 0 (0.0) | 11 (4.9) | |
| Education Level | Secondary Education | 14 (5.4) | 1 (3.1) | 13 (5.8) | 1.503 (0.682) |
| | Diploma | 22 (8.6) | 2 (6.2) | 20 (8.9) | |
| | Bachelor Degree | 194 (75.5) | 24 (75.0) | 170 (75.6) | |
| | Master Degree | 27 (10.5) | 5 (15.6) | 22 (9.8) | |
| Recreational Running Experience (Years) | 6 months to 2 | 92 (35.8) | 12 (37.5) | 80 (35.6) | 5.940 (0.031)* |
| | 3 to 5 | 70 (24.2) | 5 (15.6) | 65 (28.9) | |
| | 6 to 10 | 47 (18.3) | 8 (25) | 39 (17.3) | |
| | More than 10 | 48 (18.7) | 7 (21.9) | 41 (12.8) | |
| Suffer from LBP | Yes | 74 (28.8) | 14 (43.8) | 60 (26.7) | 3.988 (0.046)* |
| | No | 183 (71.2) | 18 (56.2) | 165 (73.3) | |
| History of LBP (Years) | Empty | 180 (70) | 18 (56.2) | 162 (72) | 5.005 (0.020)* |
| | 1 to 2 | 34 (13.2) | 18 (56.2) | 162 (72) | |
| | 3 to 5 | 28 (10.9) | 5 (15.6) | 29 (12.9) | |
| | > 5 | 15 (5.8) | 3 (9.4) | 12 (5.3) | |

*Significant at 0.05 level; LBP= low back pain, CSE= core stability exercise

The present study also uncovers the reasons for not engaging in or regularly continuing CSE. 32.7% of the recreational runners stated a lack of time to do CSE. 37% reported a lack of motivation and fatigue as reasons for not practicing CSE. Group exercises with peer encouragement could help improve a runner's motivation to perform CSE regularly (Jõesaar et al., 2012). Shaw et al. reviewed the impact of virtual reality (VR) on players' motivation and exercise performance. They revealed that greater cooperation and motivation were achieved due to the competitive experience in VR games (Shaw et al., 2016). Thus, VR is a viable solution for motivating runners to complete their CSE because it employs virtual players instead of actual ones.

Moreover, this study observed that the recreational runners had good practice toward CSE preventing LBP. More than 90% of them performed CSE in a slow and controlled manner and those stopped doing CSE if it aggravated their LBP. These findings align with the previous literature (Harvard health publishing, 2016; Princing, 2021). Besides, above 85% performed CSE for recommended frequency and duration to strengthen their core muscles and prevent LBP. Those also practiced CSE without holding their breath. In line with these findings, a previous study stated that CSE is performed for recommended frequency and duration, for instance, 20-minute sessions twice a week for ten weeks (Puntumetakul et al., 2021). It is also essential to do CSE without holding your breath (Hopkins, 2009).

Besides, recreational runners' age and gender showed a significant association with their practice toward CSE. These findings align with past studies (Gomes et al., 2017; Mao et al., 2020). Further, their BMI and running experience were significantly associated with their practice toward CSE. These findings might be due to those participants understanding the importance of CSE and regularly practicing them to prevent LBP. Previous literature also stated that BMI highly impacts an individual's exercise adherence (Khaled et al., 2016). Past exercise experience among individuals had stable behavior in the long run and acted as a critical forecaster of future behavior (Rodrigues et al., 2020). Suffering from LBP and a history of LBP among recreational runners showed a significant association with their practice toward CSE. This result is consistent with a recent study stating that individuals with LBP were more adherent to the exercise-based rehabilitation program (Shahidi et al., 2022). There is a need to assess the extent of the practice of CSE between recreational runners with and without LBP in future studies. Besides, as the participants' age, gender, BMI, running experience, suffering from LBP, and history of LBP were significantly associated with their levels of practice toward CSE, the researchers would frame and implement appropriate strategies focusing on those demographic categories to improve the participants' levels of practice of CSE preventing LBP.

On the other hand, this study observed no significant association between recreational runners' education level and their practice toward CSE. In line with this finding, (Shettigar et al., 2019) found that an individual's level of education was not significantly associated with exercise

adherence. However, previous studies stated that education level is associated with the level of practice of physical exercise (Tarducci et al., 2016). Therefore, further research is warranted to explore the impact of educational status among recreational runners on practice toward CSE.

This study is limited to the recreational runners of Selangor state, Malaysia. It can be extended in the future among recreational runners across Malaysia to generalize the findings. The difference in KAP among recreational runners concerning their demographic variables can be revealed in further research.

## Conclusion

This study is the first one that addresses the KAP about CSE in preventing LBP among recreational runners belonging to Selangor, Malaysia. The finding reveals that recreational runners have adequate knowledge and understanding of CSE and regularly practice them to reduce the risk of LBP. Furthermore, most of the participating runners exhibited a positive attitude toward CSE, in which more than 75% of them felt that it is vital for running and improves their fitness level. Recreational runners showed good practice toward CSE. More than 85% performed CSE for recommended frequency and duration to strengthen their core muscles and prevent LBP. All demographic variables except the education level of recreational runners were significantly associated with their practice toward CSE. The findings of this study add to the existing literature on KAP recreational runners towards CSE in preventing LBP. Still, motivational strategies and awareness and training programs can be conducted for Malaysian recreational runners to enrich their KAP toward CSE and prevent LBP.

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## Conflict of interest

No potential conflict of interest was reported by the author (s).

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# ЗНАННЯ, СТАВЛЕННЯ ТА ПРАКТИКИ, ЗАСВОЄНІ БІГУНАМИ-ЛЮБИТЕЛЯМИ ЩОДО ВПРАВ НА СТІЙКІСТЬ КОРПУСУ ДЛЯ ЗАПОБІГАННЯ БОЛЮ В ПОПЕРЕКУ: ПЕРЕХРЕСНЕ ДОСЛІДЖЕННЯ

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Авторський вклад: A – дизайн дослідження; B – збір даних; C – статаналіз; D – підготовка рукопису; E – збір коштів

Реферат. Стаття: 7 с., 2 табл., 4 рис., 16 джерел.

**Історія питання.** Стійкість корпусу та гарна бігова механіка є основними компонентами, необхідними для бігу, включаючи тих, хто бігає для відпочинку зі змагальним аспектом або без нього. Отже, для мінімізації випадків болю в попереку (БП) необхідні адекватні знання, ставлення та практика (ЗСП) вправ на стійкість корпусу (ВСК). Таким чином, метою цього дослідження було визначити ЗСП бігунів-любителів щодо ВСК для запобігання БП та виявити зв'язок між їхніми демографічними характеристиками та рівнями практики стосовно ВСК.

**Матеріали та методи.** Було прийнято план перехресного дослідження, і методом простої випадкової вибірки було відібрано триста бігунів-любителів. За допомогою Google Forms серед них було розповсюджено напівструктуровану анкету. Вона складалася з 28 пунктів, що відображали демографічні характеристики учасників і їхні ЗСП щодо ВСК. Із 300 було отримано 257 заповнених анкет, що вказує на частку 86% тих, хто відповів. Аналіз даних проводили за допомогою ПЗ Statistical Package for the Social Science (SPSS) 28.0.

**Результати.** Правильні відповіді на запитання в анкеті, пов'язані зі знаннями, становили від 65% до 91%. Точніше, 91,4% учасників дослідження розуміли ВСК. Крім того, більшість учасників показали позитивне ставлення до ВСК, вважаючи, що це істотно важливе для бігу (79%), покращення фізичної форми (76%), зниження ризику травм (71%) та покращення їхнього зовнішнього вигляду (54%). Більшість учасників (>85%) виконували ВСК з рекомендованою частотою та тривалістю, щоб зміцнити свої м'язи корпусу та запобігти БП. Бігуни-любителі мали гарну практику ВСК.

**Висновки.** Бігуни-любителі мають достатні знання, позитивне ставлення та гарну практику щодо ВСК. Це дослідження дало підстави припустити можливість проведення мотиваційних стратегій і програм підвищення обізнаності для покращення ЗСП бігунів-любителів щодо ВСК з метою запобігання БП.

**Ключові слова:** знання, ставлення, практика, м'язи корпусу, бігуни, вправа, біль у попереку.

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