Questionnaire of inclusion in Paralympic dance: validation and pilot study

Sara Aliberti1 · Vincenzo Rago2 · Francesca D’Elia1 · Gaetano Raiola3

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Abstract
Purpose The aims of this study were to assess the validity and reliability of a structured questionnaire of inclusion for Paralympic dance (PD), the association between the type of athlete about the perception of inclusion in own dance studio, and to describe knowledge and perceptions of inclusion in PD participants.

Methods Thirty-eight Italian PD participants answered a survey and a structured questionnaire of inclusion in PD (QIPD).

Results The internal consistence of the QIPD was acceptable ($\alpha = 0.79$) albeit one item greater than 1 was excluded, and the test–re-test reliability was moderate to excellent (ICC 0.66–1.00). Most participants with disabilities reported to approach dancesport due to friendship and involvement of dance coach, whereas most participants without disabilities thanks to dance coach (86%). Most participants with disabilities reported to practice PD for pleasure and passion, whereas participants without disabilities because they feel emotion by dancing with a partner with disabilities (83%). A relationship was observed between the type of athlete in the coach’s attempt to remove all barriers to participation ($X^2 = 4.994$).

Conclusion The QIPD is valid and reliable to assess knowledge and perceptions of inclusion in PD. PD participants with and without disability seem to perceive sport inclusion similarly, except for the removal of barriers to participate in PD courses.

Keywords Disability · Unified sport · Barriers · Perception · Inclusion

Introduction
Paralympic dance (PD) is part of the unified sport model, characterized by the fact that a group of participants without disabilities takes part in an activity focused on sport for people with disabilities, mainly to meet the needs and skills of dancers with disabilities of the group. PD was developed in Sweden in 1968 for recreational and rehabilitative purposes. In Italy, in February 2005, the first PD school was founded. Participants can compete by dancing with a partner with or without disabilities, in a mixed group or alone.

Although sports participation is a basic human right, many people with disabilities still have limited access to sports activities [1]. They are less likely to participate than healthy individuals or people without disabilities [2]. Promoting inclusion through sports activities has received meaningful attention in literature, except for relatively new sports [1], such as PD. Dance can bridge the social gap between people with and without disabilities, as well as strengthen the importance of being socially included, regardless of the presence or absence of difficulties. Sports activities can promote inclusion, relying on the integration of people regardless of their health status [3]. When people with disabilities decide to attend a dance school, they may encounter several barriers. The study of Aujla and Redding [4] said that the most commonly encountered barriers included the transportation system, access to facilities, cost of materials, lack of regular classes focused on progression, accredited courses and training, lack of information about opportunities available to people with disabilities. Other barriers included low self-esteem and communication skills, reduced motor skills, low baseline levels of physical activity, and feelings of exclusion [5, 6]. In addition, adults who participate in inclusion programs in informal settings are more likely to experience
significant barriers than children. These are represented by the segregated nature of their lifestyle, their economic status, their level of adaptation and functioning, and the availability of transportation, and lack of other supports to facilitate their involvement [7, 8].

One of the major criticalities of the Italian inclusive model is the lack of assessment of the quality of inclusive processes implemented [9]. Currently, the most popular questionnaire to assess inclusion is the Index for Inclusion [10], a tool and strategy for self-evaluation, used exclusively in schools [11]. The Index not only identifies aspects of the status quo of the educational institution regarding inclusion, but also leads schools to develop a plan for improvement [10]. This is exactly what should be done in sports field as well. Recent quality of life surveys claim that people with disabilities who are regularly involved in adapted sports perceive themselves as better than their inactive peers [12, 13]. The primary motivations for participation in physical activity, among athletes with disabilities, were the maintenance of physical and/or mental health [14] and the perception of a greater control of their disability [15]. Currently, there are not many studies on PD. Some of them have found an increased self-esteem in people with disabilities who practiced PD [16], and a qualitative difference in performance among participants with the same functional classification [17]. Therefore, further research is needed to provide insights into how self-perceptions in athletes with disabilities develop differently to athletes without disabilities [18]. It is recommended to improve public awareness of people with disabilities, especially in relation to sports activity [19]. This should aim to challenge perceptions and create a more accurate and diversified representation of active people with disabilities among their peers without disabilities. Experiencing an inclusive activity, such as dancesport, can be a key means of changing perceptions of people with and without disabilities [19]. Additionally, athletes felt that sports negated the perceptions of incompetence that others held about people with disabilities, and that sports could change their stereotypical view [14]. According to the aforementioned literature, it seems that PD could promote sports inclusion and improve people’s lifestyle. However, knowledge and perception of inclusion of PD participants have not been described yet.

The first aim of this study was to assess the validity and reliability of a structured questionnaire of inclusion for PD (QIPD) and the association between the type of athlete about the perception of inclusion in own dance studio. The second aim was to describe knowledge and perceptions of inclusion in PD participants. It is important to gain an in-depth view of the athletes’ experience in this unified sport, their perceptions of inclusion, the factors that helped or hindered it, the motivations and ways in which they approached this discipline and their expectations.

### Methods

#### Design and participants

The present study was designed to describe the characteristics of 153 Italian PD athletes registered in the Italian Federation of Dancesport and to analyze the relationship between the perception of inclusion in the sports context and the type of athlete (with and without disabilities). 38 out of 153 athletes answered the survey: 23 athletes with disabilities (age, Mean ± standard deviation [SD] = 26 ± 12 years old) and 15 athletes without disabilities (27 ± 12 years old). Both groups had 6 ± 3 years PD background. The majority were women from southern Italy, attended a traditional school, possessed a high school diploma, are currently studying, and the predominant disability was tetraparesis. A detailed description of demographic characteristics about participants is depicted in Table 1.

To assess the reliability of the QIPD, a random subsample (n = 13) was asked to repeat the questionnaire after three months. Data were stored and processed anonymously. Inclusion criteria were that the athletes were able to understand and answer the questions, either on their own or with the help of a caregiver. The questionnaire was appropriate for people with physical disabilities or mild cognitive disabilities.

#### Table 1 Demographic characteristics of PD athletes (data are absolute and relative frequency)

| Variable              | Category         | With disabilities (N/%) | Without disabilities (N/%) |
|-----------------------|------------------|-------------------------|---------------------------|
| Gender                | Woman            | 15/65.2                 | 9/60                      |
|                       | Man              | 8/34.8                  | 6/40                      |
| Origin                | North            | 9/39.1                  | 6/40                      |
|                       | Center           | 5/21.7                  |                           |
|                       | South            | 9/39.1                  | 9/60                      |
| Academic qualification| High school      | 15/65.2                 | 13/86.7                   |
|                       | Bachelor degree  | 3/13                    | 1/6.7                     |
|                       | Master’s degree  |                          |                           |
|                       | Doctoral degree  | 1/4.3                   |                           |
| Type of school        | Special school   | 4/17.4                  |                           |
|                       | Traditional school | 19/82.6              | 15/100                    |
| Type of disability    | Tetraparesis     | 9/39.1                  |                           |
|                       | Down syndrome    | 6/26.1                  |                           |
|                       | Physical disability | 4/17.4               |                           |
|                       | Other            | 4/17.2                  |                           |
| Current status        | Studying         | 11/47.8                 | 5/33.3                    |
|                       | Working          | 7/30.4                  | 9/60                      |
Data collection

A survey and a structured questionnaire, with the aim of assessing knowledge and perceptions on inclusion in the PD context, were prepared with Google Form and administered to Paralympic athletes through their dance coach via WhatsApp. The survey aimed at general knowledge of the athlete and their dance studio experience through multiple choice and short answer questions, while the structured questionnaire, QIPD, aimed to quantify the overall perception of inclusion in own dance studio using a Likert scale. The QIPD was a PD-based adaptation on the Index for Inclusion described by Booth and Ainscow [10]. Athletes were shown a list of statements to which they had to indicate the extent to which they agreed or disagreed with each. The levels expressed for each question were a score from 1 (very agree), 2 (fairly agree), 3 (disagree) to 4 (strongly disagree). The item included in QIPD are depicted in Table 2.

Statistical analysis

To validate the questionnaire, we first assessed its internal consistency through Cronbach’s $\alpha$ and associated 95% confidence intervals (CI) for the questionnaire as a whole and deleting each item individually. A Cronbach’s $\alpha$ of 1 indicated perfect reliability, with a cut-off of 0.70 indicating an acceptable internal consistency [20]. Secondly, construct validity was evaluated using an exploratory factor analysis (EFA) applying the Kaiser criterion, extracting components with eigenvalues greater than 1; by applying varimax rotation we were able to better interpret the components [21].

Thirdly, we assessed the test–retest reliability by administering a second QIPD to a random sub-sample. The intraclass correlation coefficient (ICC) was computed and interpreted using the criteria suggested by Portney and Watkins [22] as poor reliability (ICC $\leq$ 0.50), moderate reliability (ICC 0.50–0.75), good reliability (ICC 0.75–0.90) and excellent reliability (ICC $\geq$ 0.90).

A frequency analysis was performed to explore the type of athlete within various personal characteristics, reason for participating and way to approach to the sport as well as subjective perceptions of the sport context. A chi-square analysis ($X^2$) was performed to test the independence between type of athlete (with and without disabilities) and subjective perception of the sport context.

Descriptive statistics are presented as absolute and relative frequencies unless otherwise described. Statistical significance was set at $P \leq 0.05$. Data analysis were performed using Statistical Package for Social Science software (IBM SPSS Statistics for Windows, Version 25.0. Armonk, NY).

Table 2 Items included in the Questionnaire of Inclusion in Paralympic Dance (QIPD)

| 1. I feel welcomed in the group |
| 2. I respect my coach |
| 3. There is cooperation between my coach and my family |
| 4. My teammates and I are equally-treated from our coach |
| 5. I realized that there is no difference between my teammates and I |
| 6. My coach tries to remove all barriers to allow everyone’s participation |
| 7. My coach encourages me to achieve the best performance outcomes |
| 8. My coach encourages me to be proud of my classmates’ achievements |
| 9. My dance studio is accessible to everyone |
| 10. The transportation system, from home to dance studio, is functional |
| 11. The service facilities (bathrooms, room) are kept in good conditions |
| 12. I believe the choreographies are designed to improve my dance-related skills/abilities |
| 13. Differences are not an issue; rather, they are seen as a valuable resource |
| 14. My coach favors inter-teammates cooperation and socialization |
| 15. I feel more autonomous in daily life due to sport activity |
| 16. Experienced athletes supervise less-experienced ones (tutoring) |

Table 2 was excluded by the EFA. The resulting domains were interpreted by assigning them a name based on the original variables included in each domain:

- PC 1 included item 3, 11, 12 and 13, related to inclusive practices.
- PC 2 included item 2, 6, 7 and 9, related to dance coach’s attitude.
- PC 3 included item 1, 4 and 5, related to acceptance.
- PC 4 included item 15 and 16, related to autonomy.
- PC 5 included item 10 and 14, related to accessibility.

The test–re-test reliability of the QIPD was moderate to excellent (ICC 0.66–1.00; $P < 0.05$). A detailed description of the reliability of the single item is reported in Table 3.

A significant relationship was observed between type of athletes regarding the coach’ attempt to remove all barriers to participation ($X^2 = 4.994; P = 0.025$). A detailed description of perceived sport inclusion is reported in Table 3.
Table 3  Perceptions between PD athletes with and without disabilities on sport inclusion and ICC of test–re-test reliability of QIPD

| Variable                                                   | Test re-test reliability | Score | Type of athlete | Chi-squared analysis |
|------------------------------------------------------------|--------------------------|-------|-----------------|----------------------|
|                                                            | ICC (95%CI)               |       | With disabilities | Without disabilities | X²        | P       |
| I feel welcomed in the group                               | 1.00 (1.00–1.00)         | 0.001 | 19              | 15                   | 2.916     | 0.088   |
| I respect my coach                                         | 0.72 (0.04–0.84)         | 0.017 | 22              | 12                   | 2.362     | 0.124   |
| There is cooperation between my coach and my family       | 0.91 (0.71–0.97)         | < 0.001 | 19          | 11                   | 1.666     | 0.435   |
| My teammates and I are equally-treated from our coach     | 0.72 (0.09–0.91)         | 0.017 | 20              | 13                   | 0.001     | 0.979   |
| I realized that there is no difference between my teammates and me | 0.78 (0.29–0.93)         | 0.006 | 20              | 13                   | 0.838     | 0.658   |
| My coach tries to remove all barriers to allow everyone’s participation | 0.78 (0.29–0.93)         | 0.006 | 23              | 12                   | 4.994     | 0.025   |
| My coach encourages me to achieve the best outcomes       | 0.87 (0.57–0.96)         | < 0.001 | 22          | 13                   | 1.008     | 0.315   |
| My dance studio is accessible to everyone                 | 1.00 (1.00–1.00)         | < 0.001 | 23          | 14                   | 1.575     | 0.210   |
| The transportation system from home to dance studio is functional | 0.83 (0.47–0.95)         | 0.002 | 13              | 4                    | 3.737     | 0.291   |
| The service facilities (bathrooms, room) are kept in good conditions | 0.66 (–0.09–0.89)        | 0.034 | 20              | 12                   | 1.586     | 0.452   |
| I believe the choreographies are designed to improve my skills/abilities | 0.78 (0.29–0.93)         | 0.006 | 22              | 14                   | 2.191     | 0.334   |
Most participants with disabilities reported to approach dancesport for friendship (36%) and the involvement of dance coach (32%), whereas most of athletes without disabilities thanks to the involvement of dance coach (86%). A representation of reported ways to approach dancesport is depicted in Fig. 1. Most participants with disabilities reported to practice dancesport for pleasure (83%), whereas athletes without disabilities to feel emotion (33%). A representation of reason for practicing dancesport is depicted in Fig. 2.

### Discussion

To the best of our knowledge, the present work is the first to validate a questionnaire on inclusion in PD context and to improve knowledge and perceptions of athletes, with and without disabilities, on inclusion in this discipline. The QIPD showed an acceptable level of internal consistence between items and a moderate to excellent interclass coefficient between test and re-test, which showed us that...

| Variable | Test re-test reliability | Score Type of athlete | Chi-squared analysis |
|----------|--------------------------|-----------------------|---------------------|
| Differences are not an issue; rather, they are seen as a valuable resource | 0.87 (0.57–0.96) | 20 12 | 1.586 0.452 |
| My coach favors cooperation and socialization | 1.00 (1.00–1.00) | 21 13 | 4.393 0.222 |
| I feel more autonomous in daily life due to sports activity | 0.78 (0.29–0.93) | 19 12 | 0.041 0.839 |
| Experienced athletes supervise less-experienced one (tutoring) | 0.78 (0.27–0.93) | 18 9 | 2.249 0.325 |

The score of the answers ranged from 1 (very agree), 2 (fairly agree), 3 (disagree) to 4 (strongly disagree)

CI confidence intervals, ICC intraclass correlation coefficient

### Table 3 (continued)

| Variable | Test re-test reliability | Score Type of athlete | Chi-squared analysis |
|----------|--------------------------|-----------------------|---------------------|
| Differences are not an issue; rather, they are seen as a valuable resource | 0.87 (0.57–0.96) | 20 12 | 1.586 0.452 |
| My coach favors cooperation and socialization | 1.00 (1.00–1.00) | 21 13 | 4.393 0.222 |
| I feel more autonomous in daily life due to sports activity | 0.78 (0.29–0.93) | 19 12 | 0.041 0.839 |
| Experienced athletes supervise less-experienced one (tutoring) | 0.78 (0.27–0.93) | 18 9 | 2.249 0.325 |
the instrument was reliable, as it gave us the same result when the measurement was repeated. The EFA identified five dimensions related to inclusive practices, dance coach’s attitude, acceptance, autonomy and accessibility, which allowed us to exclude one item from the initial 16-item questionnaire. The item “My coach encourages me to be proud of my teammates’ achievements” was not related with PC. We observed a significant association between the type of athlete and own perception of inclusion in the PD context. Additionally, we observed a different perception on barriers removal by the dance coach to allow the participation of everyone in dance studio. On the other hand, there was a non-significant difference in the perception of the sport inclusion between athletes with and without disabilities. As for knowledge on how to approach sport and associated motivation, we found that most participants with disabilities reported to approach dancesport for friendship or dance coach and practice PD for pleasure. On the other hand, PD participants without disabilities reported to approach dancesport due to dance coach and practice it to feel emotions.

PD participants with disabilities were predominantly women (65.2%) with an average age of 26 years old. Most of them were high school graduates (65.2%), attended a traditional school (82.6%) and were currently studying (47.8%). The prevalent disability was tetraparesis (39.1%), followed by Down syndrome (26.1%). On average, they practiced PD for 6 years. Most PD participants without disabilities were female (60%), from Southern Italy (60%) with an average age of 27 years old. They had high-school diploma (86.7%), had practiced PD for an average of 6 years, but, unlike PD participants with disabilities, they were employed (60%). This may be because PD participants with disabilities have difficulty finding work due to their limitation. In Italy, within the population with disabilities aged between 15 and 64, only 31.3% of those suffering from severe limitations are employed (26.7% among women, 36.3% among men), against 57.8% of people without limitations [23]. In this context, sports participation can provide various job opportunities, such as becoming a PD coach. This type of environment seems to improve the sense of competence and connection of socially vulnerable people, as well as quality of life and work skills, transferable outside of PD contexts [24].

Another objective of the present study was to describe the ways of approaching sports towards whom a kind of “inverse integration” is achieved [25], as participants without disabilities have to adapt to a Paralympic context. Most of them (86%) reported to be aware of this sport through the involvement of their dance coach. This is likely because these participants were already attending a traditional dance studio and decided to try this new discipline as well. It is very difficult to find PD participants without disabilities who are willing to compete in the Paralympic field. However, their participation in this inclusive sport is necessary as it brings many benefits, in particular an increase in awareness of the sport practiced and of disability [26]. PD participants with disabilities, on the other hand, reported to approach this sport mainly due to their friendships (36%), dance coach (32%) and public performances (23%), while some thanks to a project at school or internet. These data indicate some of the effective ways in which the dissemination of knowledge of sport among people with disabilities can take place. Multiple agents in people’s daily life play a role concerning socialization into sport among people with disabilities, including peers, parents, therapists, coaches, camps and magazines [27]. Loneliness can also affect the range of life experiences [28], so it is necessary to build a network of knowledge spreading the word on opportunities and initiatives for people with disabilities, to allow them to participate in various contexts. Dance recitals are also a great way to show what people with disabilities may be able to perform. Finally, school projects should not be underestimated both during physical education hours and during extracurricular hours; they can offer an opportunity to compensate for training gaps and development problems due to certain difficulties, disadvantages and disabilities. Their motivations were various: PD participants with disabilities chose this sport

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**Fig. 2** Reason for practicing dancesport in **a** athletes with disabilities and **b** without disabilities
for pleasure (83%), to be able to express (13%) and include themselves (4%). It was interesting to note that although there were a few opportunities reserved for people with disabilities, they reported to choose this sport for pleasure (and not because there was no alternative). Playing a sport should not be an obligation, but a fun and enjoyable part of the day. If practiced for pleasure, there is a good probability that the athlete will continue to train over time. Additionally, physical activity and competitive sport can improve opportunities for people with disabilities to access appropriate activities in their local community [29]. However, they do not always have the possibility to choose which sport to practice, due to structural deficiencies, lack of professional figures or economic possibilities [1]. Barriers within society and the type of disability appear to prevent people with physical disabilities from participating in social areas, such as leisure activities [30]. On the other hand, for PD participants without disabilities, it was mainly a way to feel emotions (33.3%), to gain experience (26.7%) by learning to relate to them, to promote inclusion (20%) and others for a challenge against themselves (20%). Sport is made of emotions, which play a fundamental role in motivation, in reaching a goal and in daily well-being. The sport context is important for people with and without disabilities to have the opportunity to experience new challenges, to test their capacities, to create confidence and formulate stronger views of their bodies, as well as to experience exposure to social assessment [18].

As for the evaluation of inclusion in PD, a significant association between the type of athlete and the perception of inclusion was observed exclusively with regard to a response that is part of the context of inclusive cultures, i.e. "the coach tries to remove all obstacles to allow everyone to participate in courses". Unlike people with disabilities who all strongly agree, PD participants without disabilities seem to think differently in terms of dance coach’s attitude to remove barriers in the dance studio. This could be due to the type of disability or the difficulty of the teacher in resolving certain situations due to the lack of adequate training [31]. Research based on the theory of sports training for people with disabilities is currently limited [32]. Teachers should undergo adequate training on teaching methods of physical activity, as the main difficulty for many teachers is precisely the inability to plan an inclusive and personalized program especially for people with disabilities [33]. No significant associations were observed between the type of athlete and the perception of inclusion in the context of inclusive policies and practices. However, two problems in both areas emerged; both athletes with and without disabilities disagree on the functionality of the transportation system and on the use of some educational strategies, such as tutoring. Environmental barriers, such as lack of opportunities, lack of accessibility and transport, are barriers frequently encountered by people with physical disabilities [34]. Indeed, transportation system is an issue to be solved in the future, as people with disabilities do need adequate public services. Many people think people with disabilities cannot lead an independent life, but must necessarily depend on someone from the family. With the appropriate services, they could become autonomous and to do it is necessary a connection with local networks should be created [29]. To try to spread knowledge and awareness even more and to reduce transportation problem, events and exhibitions of athletes could be organized with a fundraiser managed by volunteers and family members to contribute to the realization of transportation system to be made available to those who want to use it. Finally, the lack of educational strategies, such as tutoring, observed by the questionnaire, could result from the lack of adequate training of coaches. These educational practices, can promote cooperation, accountability, inclusion and communication between athletes. However, proper training is required to apply them. Inclusive education must have as its purpose the well-being and quality of life, taking care of education, safeguarding both physical and psychosocial development [35]. People with disabilities who participate in recreational activities develop a greater sense of control in both their physical and social life [28] and have more positive perceptions of their well-being [36].

It is important to describe some limitations inherent to this study. First of all, our sample size was relatively small, underlining the need to repeat our questionnaire over a wider range of participants. Additionally, the questionnaire was administered during the COVID-19 pandemic and the athletes had not danced in a long time, so their responses may have been influenced by this. The lockdown may have had a significant impact on the physical and mental state of the athletes [37]. Finally, parents helped athletes who had difficulty completing the questionnaire. The results of the current study have sensitive implications for coaches who are considering the possibility of implementing motor and sports inclusion in their dance studio. Coaches are encouraged to collect their athlete’s perceptions to monitor inclusion process, remove barriers, and improve life quality of athletes with and without disabilities.

In summary, we tried to develop a questionnaire to evaluate the inclusion’s perceptions in athletes with and without disabilities and to acquire evidence of the dimensional structure, internal consistence and test–re-test reliability of the questionnaire QIPD. Therefore, our questionnaire is a pilot test that can be helpful for the research of new questionnaires to evaluate inclusion’s perceptions in PD or other sports context, excluding item 8. For athletes with severe cognitive disabilities, the questionnaire with item phrased in the third person could be administered to caregivers or parents. Then, participants with and without disabilities seem to show similar perception of the context of inclusive policies and practices. The only relationship was found between the type of athlete and the perception of the
removal of barriers by the coach to allow everyone to participate in dance courses. Two problems emerged that could hinder the realization of inclusion, such as the lack of transportation system and use of some educational strategies.

Conclusion

The QIPD is valid and reliable to assess knowledge and perceptions of inclusion in PD. The exploratory factor analysis identified five dimensions, excluding item 8 by the questionnaire, related to inclusive practices, dance coach’s attitude, acceptance, autonomy and accessibility. PD participants with and without disabilities seem to perceive sport inclusion similarly. The only relationship found related to differing perceptions of barrier removal by the coach to allow everyone to participate in dance classes. PD seems to be perceived as an effective tool for promoting sport inclusion. Problems emerged concern the transportation system and the absence of some educational practices. To promote inclusion, it is important, first of all, to train dance coach correctly and to work on the removal of barriers, especially the logistic ones. Finally, the survey revealed that athletes with disabilities approached dancesport thanks to friendships and dance coach, and practiced it for pleasure and passion. On the other hand, athletes without disabilities approached dancesport thanks to dance coach and practiced it because they feel emotions in relating to athletes with disabilities. The results of the current study have sensitive implications for coaches who are considering the possibility of implementing motor and sport inclusion in own dance studio.

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Conflicts of interest The authors declare that they have no conflict of interest.

Ethical approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent Informed consent was obtained from all individual participants included in the study.

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