PROFESSIONAL COMPETENCIES OF HEALTH AND FITNESS INSTRUCTORS: DO THEY MATCH THE EUROPEAN STANDARD?

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Abstract:

The aim of this study was to test professional competencies of the sample of health and fitness instructors (HFIs) according to *EuropeActive's* educational standards at level 3 referenced to the European Qualifications Framework (EQF), and to explore the associations between the formal education of HFIs and their current competencies. The core knowledge (CK) of 155 HFIs and the specific knowledge (SK) of 54 fitness instructors (FIs) and 35 group fitness instructors (GFIs) were analysed. In addition, 43 FIs and 35 GFIs underwent an examination of their practical skills. Only 11 (7.1%) of the HFIs met the requirements for the CK. We found no significant differences by age, education, type of employment, or professional experience for the CK test. No FIs passed the test for SK. Only 10 (15.6%) of the GFIs passed the test for SK. However, adequate practical instruction skills were found for the FIs (n=29, 70.7%), as well as for the GFIs (n=31, 91.2%). Only three HFIs passed the overall examination for the educational standards at EQF-level 3. The results highlight the importance of testing the competencies of HFIs in other European countries and of promoting the need for lifelong learning for HFIs. The competencies of HFIs are an important source of trust for healthcare providers and other sector stakeholders implementing the strategy for the prevention of non-communicable diseases.

Key words: *physical-activity professionals, fitness, standards, testing, European Qualification Framework*

Introduction

Morbidity and mortality from non-communicable chronic diseases (NCDs) threaten the health, quality of life and economy of the European Union (EU). Lithuania has the highest ischemic heart disease mortality rate, higher than the EU average mortality rate from stroke, lowest life expectancy at birth and lowest self-reported health status in the EU (Health at a Glance: Europe, 2014). Lifestyle factors such as physical inactivity, nutrition, tobacco smoking, alcohol consumption and negative stress are key lifestyle factors which contribute to the development of NCDs (Frieden, 2015; Owen, Salmon, Koohsari, Turrell, & Giles-Corti, 2014; Sagner, et al., 2014). Unfortunately, in Lithuania, it was found that 23% of the population smoked, alcohol consumption was the highest in the European region, and suicide mortality rates were the highest in the EU (Health at a Glance: Europe, 2014).

Sport and exercise play an important role in the prevention and management of NCDs (Davis, et al., 2014). Inactivity was found to cause 9% (range 5.1-12.5%) of premature mortality, or more than 5.3 million deaths that occurred worldwide in 2008. Moreover, the elimination of physical inactivity would increase life expectancy of the world's population by 0.68 (range 0.41-0.95) years (Lee, et al., 2012).

In 2013 the International Olympic Committee issued a consensus statement emphasizing the need to focus on behavioural change as the core component of all clinical programmes for the prevention and management of chronic diseases (Matheson, et al., 2013). The group of experts concluded that the complex non-linearity of health behaviour required understanding of importance of the human element in behavioural change and human-centred design in the creation of prevention programmes (Matheson, et al., 2013). Recently, the Physical Activity Strategy for the World Health Organization (WHO) European Region 2016-2025 was launched (Lithuanian WHO…, 2015). The leadership for promoting physical activity (PA) for health is set out for the national ministries of health with the encouragement to establish inter-sector coordination mechanisms between health, sports, education, transport, urban planning, environment and social affairs.

The European health and fitness (H&F) sector is rapidly developing. In the European Health & Fitness Market Report 2016 it is indicated that it currently serves over 50 million consumers, generates 26.8 billion Euros in revenues, employs 400.000 people, and consists of 48.000 facilities (Deloitte & EuropeActive, 2016). The collaboration between the healthcare systems and the H&F sector is very important, yet the interaction between both in Europe is not always or everywhere adequate (Muth, Vargo, & Bryant, 2015; Sagner, et al., 2014).

The underlying reasons for the indifference are complex. Firstly, health and fitness instructors (HFIs) have not historically been considered as an extension of a healthcare team (Muth, et al., 2015). Unfortunately, representatives of healthcare systems tend to view the H&F sector as founded on the principles different from the medical system and lacking the "credibility" and "authenticity" to partner on the NCDs prevention (Matheson, et al., 2013). The main problem is that the H&F sector is in some cases seen as a private multibillion-dollar industry working in effective synergy with the "McDonaldisation of society", feeding modern consumerism and making business by manipulating clients' concerns similarly to hamburger restaurant chains (Andreasson & Johansson, 2014).

Secondly, the healthcare system is not prepared to apply exercise prescription as a first-line therapy because general practitioners' training is deficient in education on specific health-enhancing physical activity (Joy, Blair, McBride, & Sallis, 2013). When prescribing PA to patients, general practitioners should provide information about how and where their patients can "complete" the prescription and who to consider referral for professional advice regarding that prescription (Joy, et al., 2013). It is very important since many clients who are seeking to implement recommendations for PA or lifestyle changes might have unrealistic expectations or may become discouraged if they fail to reach their goals in a particular period of time. As the formation of PA habits is a sophisticated phenomenon (Biddle, Brehm, Verheijden, & Hopman-Rock, 2012; Tappe, Tarves, Oltarzewski, & Frum, 2013), prescribing and fulfilling PA recommendations must be very professional (Biddle, et al., 2012; Melton, Katula, & Mustian, 2008; Pettitt, 2013; Shephard, 2015).

Across EU countries huge differences exist in the education, competencies and employment of HFIs. Education is offered through many institutions and their requirements range from brief online courses to university degrees (Stacey, Hopkins, Adamo, Shorr, & Prud'homme, 2010). HFIs are the main source to convey exercise-related information to the general public. They provide information and implement counselling in exercise information, exercise prescription, clients' fitness assessment and guidance. Unfortunately, there is a lack of review studies that would analyse their education and competencies; it is unclear how HFIs obtain evidence-based information and other issues associated with their education and lifelong learning. Moreover, as the H&F sector is expanding very fast, HFIs must be role models for thousands of clients. Unfortunately, some studies reveal that HFIs have serious problems with their own weight control and exercise overloading (Bratland-Sanda, Nilsson, & Sundgot-Borgen, 2015; Bratland-Sanda, Sundgot-Borgen, & Myklebust, 2015) and that they lack an adequate training to provide highly demanding information on topics such as nutrition and weight management (McKean, Slater, Oprescu, & Burkett, 2015).

However, there is no reliable scientific research in the EU to evaluate training and the differences in competencies of HFIs. In their study of knowledge translations to HFIs, Stacey et al. (2010) found that out of 626 individual citations identified in the search strategy only two studies analysed the topic. In their study Hare, Price, Flynn, and King (2000) found that the most important common source of information for HFIs was networking with peers. HFIs with higher levels of education (e.g., graduate degrees) were more inclined to use scholarly sources of evidence compared to those with lower levels. Further, De Lyon and Cushion (2013) found that HFIs learn in multiple and complex ways, many of which were informal and retrieved through the naturalistic processes that occurred within the context of their everyday work.

Despite the lack of scientific efforts, the need to structure the qualifications of the European H&F sector has emerged in the last decade. The European H&F industry qualifications are regulated by *EuropeActive* (www.europeactive.eu), a non-profit organization representing the whole of the European H&F sector in Brussels. The Professional Standards Committee (PSC) of *EuropeActive* is responsible for the developing of regulatory framework, which underpins public confidence in the work and development of the European H&F sector. Furthermore, the PSC has developed the Sectoral Qualifications Framework (SQF) and set the educational standards for the H&F sector. Its activities are based on the European Qualifications Framework (EQF), thus strictly implementing guidelines set by the European Commission. Educational standards for all vocational levels and for the first academic level have been developed. The current stage of development for the European Fitness Sector SQF as referenced to the EQF is shown in Table 1.

As far as we know, in many European countries H&F sector employers control the qualification of their instructors via the European Register of Exercise Professionals (www.ereps.eu.com,

Table 1. The fitness sector qualification framework

EQF/SQF	General population	Special population
7 and 8		
6		Advanced Health and Exercise Specialist
5 (short cycle)		Exercise for Health Specialist Pre-diabetes Exercise Specialist Weight Management Exercise Specialist
4	Personal Trainer Pilates Trainer	Youth Fitness Trainer (12-17 years) Children's Fitness Trainer (6-11 years) Active Aging Trainer
3	Fitness Instructor Group Fitness Instructor Group Exercise to Music Instructor Aqua Fitness Instructor	
2	Fitness Assistant	

EREPS) certification. This certification is provided by the *EuropeActive* accredited training providers. Unfortunately, the qualifications accepted by the European employers (EREPS certification) have not fully been recognized by the Eastern European authorities. There is no officially recognized national register of HFIs in the Eastern European countries. To date (February 2018), there have been 147 officially registered Lithuanian fitness professionals in EREPS and all of them are graduates of the private Lithuanian fitness school *Active Training* (www.activetraining.eu).

Due to the afore-mentioned challenges for the public health sector regarding the population health behaviour changes, the healthcare sector and the H&F sector need to reorganize their current strategies. Therefore, it is of high relevance to assess the issues scientifically. Are the Lithuanian and other European H&F sectors prepared to collaborate with the national healthcare sectors? Could the national healthcare professionals trust the H&F sector? Do HFIs demonstrate solid competencies, which are important or even mandatory for collaborating with the healthcare and other sectors? Do these competencies align with the requirements of the European (*EuropeActive)* standards?

Thus, the aims of the current study are 1) to test professional competencies of the sample of HFIs according to the European standards – EQF-level 3 for fitness instructors in gyms (FIs) and group fitness instructors (GFIs); 2) to explore the associations between the formal education of HFIs and their current professional competencies according to the European standards (EQF-level 3 for FIs and GFIs). In our study, we hypothesized that a majority of HFIs will pass the testing for the EQF-level 3 standard and that their higher education will be associated with better results in testing.

Methods

Participants

The study was conducted in fitness clubs throughout Lithuania and included 202 HFIs. Twenty-two persons refused to participate in the study, and 18 were absent, ill or reported other reasons for not participating. Thus, our sample consisted of 155 HFIs (76 men), aged between 18 to 52 years, mean age (SD) was 31.7 (7.35) years. We divided the sample in the two groups (age ≤29.9 years; n=77, and ≥30 years; n=78). Fifty-nine (38.1%) instructors were FIs, 64 (41.3%) were GFIs and 32 (20.6%) aqua fitness instructors (AFIs).

The professional work experience of the sample was from several months to 28 years. According to their professional work experience the sample was divided into three groups: 0-2.99 years (n=46, 29.6%), 3-9.99 years (n=64, 41.3%), ≥10 years (n=45, 29.1%).

The human resources departments of the fitness clubs provided information about the participants' educational backgrounds. More than one third (n=58, 37.4%) of the sample held a bachelor's degree from the two higher education institutions of Lithuania, 25 (16.1%) held a master's degree, 26 (16.8%) had a licence and 46 (29.7%) were students or there were no valid certifications of their education available in the human resources departments.

Procedure

We obtained approval from the Institutional Committee for Social Sciences Research Ethics (No. SMTEK-06) prior to the data collection. Unfortunately, there were no official statistics on the number of H&F clubs in Lithuania. According to unofficial data of the Lithuanian Association of Health and Fitness Clubs, there were approximately

50 H&F centres and 400 HFIs in 2017. Yet, not all of them matched the European standards for H&F centres. Therefore, only those Lithuanian clubs that matched the European standards for H&F centres were considered. All of them provided weight training, group fitness programmes and aqua zones for their clients. Finally, only 11 clubs fulfilled these requirements. The clubs were located in the five largest Lithuanian cities. The club managers provided consent to conduct the survey.

The core knowledge (CK) examinations were organized on one particular day and time when one of the authors (S.P.) implemented the procedure. According to the European Standards (EQF-level 3 for FIs and GFIs), CK is compulsory for all instructors (FIs, GFIs, AFIs and non-choreographic), yet specific knowledge (SK) is associated with the specific professional field. The procedure consisted of filling out questionnaires and testing practical instruction skills (PIS). All participants had to fill out the CK questionnaire and by choice either the specific FIs or the GFIs knowledge test. Further, their practical instruction skills (PIS) were tested. As there are no specific standards for AFIs and non-choreographic instructors (Indoor Cycling, TRX, Yoga, etc.), these groups were only tested in the CK area and did not participate in the SK and PIS testing.

All the participants were informed about the aim of the research and instructed how to complete the questionnaires. They were asked to answer the questions anonymously, without any assistance. Testing time was a maximum of one hour for the CK and one hour for the SK assessment, but some participants took less time, thus the average total testing time was between 90 and 120 minutes.

All 155 participants filled out the questionnaire for the CK area and 54 participants did it for the FIs SK areas, whereas eight FIs declined to participate in further procedures. Thirty-four GFIs filled out the questionnaire for the SK area. As mentioned above, the non-choreographic GFIs (Indoor Cycling, TRX, Yoga, etc., n=30) were not provided with the SK questionnaire. Thus, finally 88 participants joined the SK (fitness or group fitness) testing.

The PIS testing of FIs took place live in the presence of an assessor. The examiners (S.P. and A.M.) explained the procedure of the PIS testing and evaluation. The participants were divided into pairs and each performed a 30-minute instruction including a warm-up (body weight exercises and cardio machines), a main part (resistance training with machines and free weights) and a cool down. The PIS testing for the GFIs was performed in the club environment with real participants. Afterwards the recorded video footages were evaluated. The evaluation for both PISs was conducted using the assessment observation checklist (10 criteria), including the warm up, main part and cool down sections. Every criterion was expressed as a percentage and 70% was the lowest requirement to successfully pass the test.

Eleven FIs refused to participate in the PIS testing procedure, thus the final sample was 43 instructors. Thirty non-choreographic GFIs (Indoor Cycling, TRX, Yoga, etc.) did not participate in the PIS testing, thus the sample for the GFIs PIS testing encompassed 34 instructors. In total, 77 HFIs (FIs and GFIs) underwent the PIS testing.

The questionnaires

All the participants (n=155) completed an anonymous questionnaire for CK. The questionnaire for this research was developed and tested during the *e-Learning Fitness project* funded by the European Commission (511669-2010-LLP-IT-KA3-KA3MP) and adopted for the Lithuanian H&F sector. The questionnaire was based on the requirements of the European standards (Fitness Instructor EQF L3, Group Fitness Instructor EQF L3). Five different areas of CK were tested (60 questions with four multiple-choice answers): Human movement (1-21 questions), Exercise physiology (22-36 questions), Lifestyle management and behaviour change (37-41 questions), Health and safety (42-52 questions) and Communication (53-60 questions). The questionnaire for the SK for the FIs or GFIs qualification consisted of 50 questions. The successful examination (≥70% correct answers from both tests and ≥70% of PIS) provided the possibility to meet the agreed prescribed minimum standards of good practice for the EQF level 3 (Europe Active…, 2017). The contents of the afore-mentioned questionnaire is provided in Table 2.

Statistical analysis

The analysis was carried out using *SPSS 19.0 for Windows* software. Descriptive statistics were calculated, Fisher's exact test and Fisher's exact test *post-hoc* Bonferroni correction for multiple comparisons were performed to ascertain whether there were differences in the distribution of testing results in FIs and GFIs by education, professional experience, age, or gender.

Results

The number of HFIs who successfully passed the CK, SK, and PIS and full EREPS examination is presented in Table 3. In summary, only three individuals in the sample, namely female GFIs, successfully passed the testing for the EQF level-3 standards and might be registered onto EREPS.

Generally, the highest CK of participants was demonstrated in the area Communication (33.5% of the participants provided correct answers) and the lowest in the area Lifestyle management (1.9% of the participants provided correct answers). Only

Table 2. Core and specific knowledge areas for fitness and group fitness instructors (SQF-level 3)

Core knowledge (60 items)				
Human movement	**Exercise physiology**	**Lifestyle management**	**Health and safety**	**Communication**
Bones and joints, Biomechanical concepts; Muscles and muscle actions; Heart, lungs and circulation; Energy systems	Components of fitness; Principles of training; Muscular strength & endurance; Aerobic theory; Stretch theory; Body composition; Monitoring exercise intensity; Warm up; Cool down; Progression;	Promoting physical activity for health; Basic nutrition; Basic stress management technique; Introduction to adaptations progressions	Safe and effective exercise; Modifications to exercise; Body awareness and exercise technique; Health and safety, dealing with accidents and emergencies; Legal requirements for emergency procedures; Professionalism, code of practice, ethics, national standards and guidelines	Building rapport; Motivational strategies; Customer service
Specific knowledge for fitness instructors (50 items)				
Core knowledge		**Resistance exercise**		**Cardiovascular exercise**
Designing an individual fitness programme; Delivering a fitness session; Information gathering, screening and informed consent; Ending the session, evaluation, giving/ gaining feedback; Safe, progressive exercise planning		Resistance machine lifts including warm up-theory; Resistance machine exercises; Free weights; Spotting; Practical guidelines for resistance training; Methods of resistance training		Cardiovascular machines; Methods of cardiovascular training
Specific knowledge for group fitness instructors (50 items)				
Complete group fitness session; Phases of group fitness session; Safe and effective alignment of exercise positions; Exercises to improve cardiovascular fitness and motor skills; Exercises to improve muscular strength and endurance; Exercises to improve flexibility; Music; Intensity; Pedagogical intervention; Cueing; Teaching methods; Choreographic methods; Clients' level; Prepare for a group fitness session; End session; Plan a group fitness session; evaluate session.				

Table 3. The number of instructors who successfully passed core knowledge, specific knowledge and practical skills testing

Took and passed the tests and final exam	Fitness Instructor	Group Fitness Instructor	Aqua Fitness Instructor
Took core knowledge test	59	64	32
Passed core knowledge test	2	6	3
Took specific knowledge test	54	34	-
Passed specific knowledge test	0	7	-
Took practical instruction test	43	34	-
Passed practical instruction test	29	31	-
Took EREPS full exam	43	34	-
EREPS passed	0	3	-

9.7% of the participants provided correct answers in Exercise physiology, 20% in Health and safety and 27.7% in Human movement.

Only a minority (n=11;7.1%) of HFIs met the requirements (≥70% of correct answers) for the CK. There were no differences in the CK test results between the different education groups. There were six HFIs (7.2%) with a higher education level who passed the CK examination compared to two (7.7%) HFIs holding licences, three (7.7%) without any education and 0% of the students. We found no significant difference in testing results by age or work experience. However, in the group which successfully passed the CK examination there were significantly more women, accordingly 10 women (90.9%) and 1 man (9.1%), p= .009.

Unfortunately, no FI passed the test for SK. Only seven (11.3%) GFIs provided 70% of correct answers for SK (Table 3). No relevant statistical differences could be found between the groups in gender, professional experience, or education (Table 4). However, our sample demonstrated a relatively high PIS. Adequate PISs were found for the FIs (n = 29, 70.7%) as well as for GFIs (n = 31, 91.2%). The higher PIS were demonstrated by FIs and GIs of a higher age. However, no differences were found in gender, work experience or education.

Table 4. The number (in percentages) of instructors who successfully passed the specific knowledge and skills examination by age, gender, professional experience and education

Variable	Fitness Instructor		Group Fitness Instructor	
	Specific knowledge	Practical instruction	Specific knowledge	Practical instruction
Age ≤ 29.9 years	0	12 (50)[a]	2 (5.1)	7 (70) [b]
Age ≥ 30 years	0	17 (93.8)[a]	5 (12.8)	24 (100)[b]
Male	0	22 (71)	1 (7.7)	4 (80)
Female	0	7 (70)	6 (12.2)	27 (93.1)
Experience 0-2.99 years	0	8 (46.2)	2 (9.1)	5 (80.7)
Experience 3-9.9 years	0	15 (77.8)	2 (8.3)	11 (84.6)
Experience ≥10 years	0	6 (100)	3 (12)	15 (100)
Education: higher	0	20 (74.1)	1 (3.1)	15 (93.8)
Education: licence	0	0	3 (21.4)	5 (100)
Education: student	0	1 (100)	0	1 (50)
Education: other	0	8 (80)	3 (21.4)	10 (90.9)

Note. [a] p=.012; [b] p=.003

Discussion and conclusions

In this study, we aimed to test the competencies of HFIs in reference to the European requirements for EQF-level 3 standards and we explored the associations between the formal education of HFIs and their current competencies according to those standards. We hypothesized that a majority of HFIs would successfully pass the testing and that a higher formal education would be associated with better test results.

However, our results showed that only a minority of the FIs passed the CK examination and only three GFIs successfully passed the examination for the HFI's competencies of the EQF level-3 standards. These findings are very disappointing regarding the challenges for the professionalization of the H&F sector (Joy, et al., 2013; Muth, et al., 2015; Pettitt, 2013; Shephard, 2015).

Since joining the EU, the Lithuanian H&F sector remains mainly private. Training of HFIs is implemented through formal and informal education. Following the Bologna process, institutions of higher education offer bachelor and master's programmes in sport (EQF levels 6 and 7) and there is a possibility to receive vocational training for EQF level 3. Unfortunately, there is no alignment of the sport and H&F sector with the EQF for EQF levels 1, 2, 4 and 5. However, within the informal education various nongovernmental organizations provide courses for getting the obligatory licence for those wishing to work in the participatory sport sector. Yet, there is no official agreement on the educational level of these informal courses. Moreover, there are no officially accepted professional standards, no qualification descriptions of the HFI's competency in Lithuania. Thus, anyone holding a sport-related university degree, having vocational training or a four-year-duration licence for sports-related work might officially be employed as a HFI. This may help to explain the results of the present study.

Unfortunately, we could not find any other study to compare our findings. Hence, this study is one of the first attempts to examine the competencies of HFIs in Europe. However, this study clearly shows that it is necessary to open European scholar discussion on the competencies of HFIs. This is crucial especially in the light of the implementation of the Physical Activity Strategy for the WHO European Region 2016-2025. Moreover, it is relevant for the recognition of the H&F sector especially by stakeholders of the healthcare system in case of further implementing effective NCDs prevention (Matheson, et al., 2013; Pettitt, 2013).

Our study demonstrated no relationships between age, professional work experience, or education in the CK testing results of the entire sample. Furthermore, there were no differences in gender, work experience, or education in the SK testing results among GFIs. We expected that a higher formal education would be associated with better results, especially in the CK testing. Surprisingly, our assumption was not confirmed. Some independent Lithuanian universities, which have already been providing sport studies, launched several H&F-related study programmes, yet, it might be that not all of them provide a truly competence-based learning and proper contents. Moreover, gaining education at EQF-level 6 does not mean that a person has already achieved a good EQF-level 3 as the EQF describes qualification levels but not the progression stages (Lester, 2015). According to their mission, universities have broader aims than to provide a narrow specialization for their graduates, and it might be that by providing an education at EQF-level 6, they have somehow missed what is

needed on the market, namely, well qualified professionals with solid learning outcomes at EQF-level 3 (Lester, 2015).

Our study has demonstrated that there is a need to strengthen the national professional education of HFIs if the H&F sector wants to earn the trust and respect of the health-care and other sectors. Especially in regard with the challenging task of implementing strategies and initiatives of behaviour change in communities, to which the H&F sector could contribute valuably. This might be achieved by strengthening vocational training and updating knowledge and skills through lifelong learning activities. Moreover, aligning different professional areas of the sport sector with the EQF might help to solve this problem.

The study outcomes demonstrate that the H&F sector should develop or update the CK of HFIs, especially in the area of lifestyle management, as behavioural changes are the main task in enhancing physical activity and the healthy lifestyle promotion (Biddle, et al., 2012; Matheson, et al., 2013; Sagner, et al., 2014). If HFI's knowledge in this area is deficient, it means that they cannot help other authorities in the wellness sector.

Despite its strengths, this study has certain limitations. Firstly, a relatively small number of participants and a high level of selection due to refusals to participate in the study, being absent, ill, or other reasons reported for nonparticipation, may be a cause of bias. Therefore, the generalization of the results is limited. Secondly, the questionnaires were translated into the Lithuanian language and used for the first time, thus this study is the first attempt to explore the issue using newly developed instruments and procedures. Thirdly, a serious limitation is that HFIs were tested without giving them time to update their knowledge and to prepare for the testing. As the EREPS is becoming widespread in European countries, other studies are recommended to use this register for the sampling as was demonstrated in the study by McKean, Slater, Oprescu, and Burkett (2014).

These findings might be interesting for other European countries as HFI's standards have been established by the EU association *EuropeActive* and are relatively new for the European H&F sector. We hope that this study will initiate a broader discussion on the topic in other European countries and will assist national sport educators and politicians in further developments to align with the EQF and sport sectors' qualifications.

The results highlight the importance of testing the competencies of HFIs in other European countries and strengthening the necessity of lifelong learning for HFIs. The competencies of HFIs is an important source of trust for the healthcare providers and other sector stakeholders implementing the strategy of non-communicable diseases prevention.

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