SRYAHWA PUBLICATIONS

Archives of Physical Health and Sports Medicine
ISSN: 2639-1805 | Volume 7, Issue 1, 2025
https://doi.org/10.22259/2639-1805.0701001

RESEARCH ARTICLE

Influence of Various Factors on Mobility in Primary School Children

Andrea Dincher[1,2]

[1]*RPTU Kaiserslautern-Landau, Institute for Sports Sciences*
[2]*Saarland University, Sports Sciences Institute*

Received: 08 February 2025 Accepted: 21 February 2025 Published: 03 March 2025

Corresponding Author: Dr. Andrea Dincher, Institute for Sports Sciences, RPTU Kaiserslautern-Landau, Fortstr. 7, 76829 Landau, Germany. ORCID: 0000-0002-2138-8409

Abstract

This study examines the influence of various predictors on mobility in primary school children. A total of 1222 children from 12 randomly selected primary schools in Saarland and Rhineland-Palatinate were tested with the MobiScreen 6-8 and MobiScreen 8-10. A linear regression analysis was used to examine the influence of age, gender, developmental disorder, active sports club membership, school type (school with and without a sports connection), BMI and migration background on mobility. The total time taken to complete the course is analyzed. The SPSS version 29 program was used for this purpose. The significance level is $p<.05$. There are significant influences of gender, developmental disorder and active sports club membership for MobiScreen 6-8, and significant influences of age, gender, developmental disorder and BMI for MobiScreen 8-10. Thus, the influencing factors appear to change over the course of primary school, with children in the first and second grades apparently benefiting more from active sports club membership than children in the third and fourth grades. Age and a higher BMI do not appear to play an important role until later primary school age.

Keywords: Primary School, Mobility, Motor Development, Children.

1. Introduction

The following points briefly introduce and describe various motor function models. These are motor skills and abilities, basic motor competencies and mobility.

1.1 Motor Skills and Abilities

Motor functions comprise control and functional processes of movements (Bös, & Mechling, 1992), which can be organized hierarchically: At the top level, a distinction is made between motor abilities and skills, whereby the skills can be divided into elementary, work and sport motor skills, as well as according to their degree of openness/closedness. The abilities, on the other hand, are divided into conditional and coordinative abilities (Willimczik, & Singer, 2009a): The development of motor functions has an influence on the development of mobility (Bentele, 2004).

1.2 Basic Motor Competencies

Access to culturally significant areas of life (participation) is seen as an aspect of a healthy and health-promoting lifestyle (Werle et al., 2006). In this context, Herrmann et al (2017) describe basic motor competencies as those motor competencies that are at least necessary to be able to participate in the culture of sport and physical activity. On the one hand, basic qualifications are context-specific and therefore often more complex, but on the other hand they are more general than specific skills. Skills and techniques and thus the further development of ability are based on these qualifications (Kurz et al., 2008); they are oriented towards the open motor skills according to Roth (1999). A distinction is made between basic motor competencies, which cannot be observed, and basic motor qualifications, which can be observed.

Citation: Andrea Dincher. Influence of Various Factors on Mobility in Primary School Children. Archives of Physical Health and Sports Medicine. 2025; 7(1): 01-07.

1.3 Mobility

Mobility describes one's own movement or the movement and handling of objects, locomotion in various ways and the use of means of transportation (Hollenweger, & Kraus de Camargo, 2013). Grupe (1984) believes that mobility is of paramount importance for human existence and engagement with the environment. It can also be emphasized because it can be seen as an essential component of health (Wydra, & Kaczmarek, 2017); without it, participation does not take place.

Mobility is embedded as a domain in the International Classification of Functioning, Disability and Health in Children and Adolescents ICF-CY model. The ICF-CY belongs to the "family" of classifications that are applied to various aspects of health and were developed by the World Health Organization (WHO).

Wydra and Kaczmarek (2017) show the relationship between motor skills, abilities, basic motor competencies and mobility. This is shown in table 1 below.

Table 1. *Relationships between motor skills, abilities, basic competencies and mobility.*

ICF-Terminology	Sport Sciences Terminology	Competence orientation	Context reference	Observable
Structures and Functions	**Physiological and anatomical performance requirements**	-	No	Yes
-	**Abilities:** Endurance, strength, speed, coordination, flexibility	-	No	No
-	-	**Basic Motor Competencies:** Self-Movement and Object-Movement	Yes	Yes
Activities: **Mobility** Changing body position, moving oneself or objects,...	**General motor skills:** Walking, running, grasping etc.	**Basic Motor Qualifications:** Bouncing,dribbling, catching, throwing and balancing, rolling, running, jumping	Yes	
Participation: Everyday, professional and sporting activities	**Special motor skills:** Sprinting, jumping high, throwing etc.	-	Yes	

Here it becomes clear that mobility in the sense of the ICF corresponds in principle to general motor skills and basic motor skills. They have a contextual reference and are all observable.

1.4 State of Research: Factors Influencing Motor Development

Researchers have been studying various factors that influence motor performance for several decades. The following is a brief overview of how gender, type of school, body mass index, sports club membership, developmental disorder and migration background affect motor performance and basic motor competencies in children of primary school age.

Krombholz (1988) found that the differences between boys and girls in motor skills and abilities are only slight. These can be seen in strength, speed and endurance performance in favor of boys and performance in the coordinative area and in fine motor skills in favor of girls. He attributes these minor differences to the small physical differences, such as muscle mass.

It was found that children who are active members of a sports club are clearly superior to children who are not active in sports in terms of motor abilities (Albrecht, 2015; Dincher, 2023a; Krombholz 1988). This difference is also evident in the basic motor competencies (Dincher, 2023a). A further distinction is made here as to whether the children play an individual or team sport. Gramespacher et al. (2024) found that a positive effect can only be seen for children who play a team sport, whereby gender also seems to play an important role here: boys may be more likely to play team sports, girls more likely to play individual sports, so that this difference can also be explained by gender on the basis of the type of sport. in contrast to the studies by Gramespacher et al. (2020; 2022), which show that both team and individual sports have a positive effect on basic motor competencies.

Albrecht (2015) describes that a body mass index (BMI) that is too high or too low has a negative effect on motor performance. This clearly shows a U-shaped relationship.

Dincher (2023a) states that developmental disorders such as ADHD, asthma, obesity, DCD, psychological or social disorders, physical or mental disabilities have a negative impact on motor abilities and basic competencies.

Various studies have shown that the concept of the School in Movement has a positive effect on motor performance (Dincher, 2025; Müller, & Petzold, 2003). Nevertheless, there are also studies that cannot prove this positive effect (Ungerer-Röhrich, & Beckmann, 2002; Worth, 2005).

Ferrari et al. (2024) investigate the influence of migration background on basic motor competencies and find that children with a migration background perform worse in the area of Self-Movement than children without a migration background. This also shows that children with a migration background on both sides (both parents born abroad) perform worse than children with only one parent born abroad. Starker et al. (2007) also show that children with a migrant background have poorer motor performance and point out that other factors such as BMI or membership of a sports club also play a role here in conjunction with the migrant background or general socialization.

There are no studies on the effect of the influencing factors mentioned on mobility as defined by the ICF.

Based on the state of research described above, this study will attempt to examine the influence of the aforementioned predictors on mobility.

2. Hypotheses

School type, age, gender, developmental disorder, BMI, active sports club membership and migration background have an effect on mobility in primary school children

3. Materials and Methods

3.1 Sample of Persons

A total of 1222 children from 12 primary schools in Saarland and Rhineland-Palatinate took part, 650 of whom were boys and 562 girls.

Table 2 below provides an overview of the entire sample, broken down by test method (MobiScreen 6-8 and MobiScreen 8-10).

Table 2. *Characteristics of the sample of persons, broken down by MobiScreen 6-8 and MobiScreen 8-10 in mean values and standard deviations (M ± SD) or number and percentage.*

	MobiScreen 6-8 (n=672)	MobiScreen 8-10 (n=550)
Age (years, M ± SD)	7.06 ± .69	9.22 ± .64
Gender (m/ f)	348/ 314 (52 %/ 47 %, 1 % missing)	302/ 248 (55 %/ 45 %)
BMI (kg/m², M ± SD)	15.97 ± 2.46	16.84 ± 3.02
Active sportsclub member	443 (66 %)	375 (68 %)
Sport per week (h, M ± SD)	2.45 ± 1.43 (only active kids)	2.98 ± 1.80 (only active kds)
Sport type (Team/ Individual/ both)	115/ 220/ 63 (26 %/ 50 %/ 14 %, 10 % missing)	117/ 191/ 57 (31 %/ 51 %/ 15 %, 3 % missing)
Developmental disorder	96 (14 %)	79 (14 %)
Migration background	114 (17 %, 10 % missing)	122 (22 %)
School in Motion	299 (45 %)	313 (57 %)

The children who were tested with the MobiScreen 6-8 are on average around seven years old, tend to be more boys than girls and have a BMI of just under 16 kg/m². Around two thirds of the children are active in a sports club, with just under half playing individual sports, 26% team sports and 14% playing both sports. These children train almost 2.50 hours per week within their sports. 14% of the children suffer from a developmental disorder and 17% of the children have a migration background. The children tested with the MobiScreen 8-10 are on average nine years old, again with a tendency for more boys than girls, and have a BMI of just under 17 kg/m². Just over two thirds are active in a sports club, with half of them playing individual sports, just under a third team sports and 15% both. These children train just under three hours per week within their sport. 14% of the children have a developmental disorder and 22% of the children have a migration background.

3.2 Variable Sample

MobiScreen 6-8 mobility screening for children aged six to eight (primary school grades one and two) and MobiScreen 8-10 mobility screening for children aged eight to ten (primary school grades three and four). Here, the children run through a course in which, after standing up from the supine position, they have to run a slalom, climb over an obstacle, crawl through an

obstacle, maneuver a 3 kg medicine ball with their lower extremities and transport another 3 kg medicine ball with their upper extremities (in MobiScreen 8-10, two balls have to be transported simultaneously). The time required for the entire run is recorded, which is used to determine whether a child's mobility is conspicuous (Dincher, 2023b; Dincher, & Dincher, 2022).

3.3 Study Flow

After approval by the Ethics Committee of Saarland University (#22-13), the consent by the ministry of education was given. Then the respective school heads gave their consent, followed by the parents of the children. Appointments have been made for the tests. These always took place in the mornings during regular lesson times.

3.4 Statistics

A linear regression analysis is calculated to determine the influence of the predictors age, gender, active sports club membership, type of school (school in motion vs. regular school), BMI, developmental disorder and migration background on mobility. The total time needed for a complete run of the respective screening is used for this purpose. The statistical program SPSS 29 was used. The significance level is $p<.05$.

4. Results

After all the requirements for a linear regression analysis were met, the following results were obtained for the predicted models for MobiScreen 6-8 and MobiScreen 8-10:

For MobiScreen 6-8, a variance explanation of 37 % achieved, for MobiScreen 8-10, a variance explanation of 44 %. The associated multi-group comparisons using ANOVA show highly significant differences with $F(7,443)=10.26^{***}$ (MobiScreen 6-8) and $F(7,424)=14.26^{***}$ (MobiScreen 8-10). The following table 3 shows the influence of the predictors school type, age, gender, developmental disorder, BMI, active sports club membership and migration background as regression coefficient β for MobiScreen 6-8 and MobiScreen 8-10.

Table 3. *Influence of the predictors on the total time in MobiScreen 6-8 and MobiScreen 8-10, presentation of the regression coefficient β and T-value of the respective t-test (*=p<.05, **=p<.01, ***=p<.001)*

Predictor	MobiScreen 6-8		MobiScreen 8-10	
	β	T	β	T
School type	-.89	-.85	-1.13	-1.62
Age	-.16	-.21	-3.24	-5.53***
Gender	2.64	2.64**	4.37	5.39***
Developmental disorder	10.44	7.26***	4.65	4.03***
BMI	.14	.69	.39	2.89*
Sports club	-3.63	-3.18**	-1.78	-1.86
Migration	.24	.18	.28	.29

The MobiScreen 6-8 shows significant influences for gender (girls need significantly more time than boys), developmental disorder (children with a diagnosis need significantly more time than healthy children) and active sports club membership (active children need significantly less time than non-members).

The MobiScreen 8-10 shows significant influences for age (older children need significantly less time than younger children), gender (girls need significantly more time than boys), developmental disorder (children with a diagnosis need significantly more time than healthy children) and BMI (children with a higher BMI need significantly more time).

5. Discussion

The aim of this study was to examine the influence of various predictors on mobility. The MobiScreen 6-8 showed significant influences of gender, developmental disorder and sports club membership. The MobiScreen 8-10 showed significant influences of age, gender, developmental disorder and BMI.

5.1 MobiScreen 6-8

The significant gender-specific differences in mobility are in contrast to the results of Krombholz (1988), who found no gender-specific differences in motor performance. Dincher and Wydra (2019) also found at the time that there were no gender-specific differences in mobility, although this relates to the MobiScreen version for kindergarten children, which was used to test primary school children. Due to the fact that boys are physically superior to girls in this age range (Mietzel, 2002), the gender-specific difference visible here was to be expected.

The results regarding the influence of developmental disorders are clearly in line with those of Dincher (2023a) that children with a developmental disorder perform worse than healthy children.

In terms of active sports club membership, there are parallels with the studies by Albrecht (2015), Dincher (2023a) and Krombholz (1988), namely that active membership of a sports club has a positive effect.

In relation to the type of school, the non-significant influence could be related to the fact that the positive effects of physical activity at school only become apparent over time; for example, no influence will yet be discernible among first-graders. In addition, the children's generally high urge to exercise could play a role here (Dincher, 2025).

The fact that there are no age-specific differences may be related to the fact that children in this age range exhibit similar play and movement behavior. Particular reference is made here to wild play, as described by Mietzel (2002).

In contrast to the influence of BMI on motor performance as in Albrecht (2015), this influence on mobility is not evident, which could possibly confirm the U-shaped progression assumed by Albrecht (2015) (children who are overweight or underweight perform worse than children of normal weight).

In contrast to the effects of migration background on basic motor competencies by Gramespacher et al (2020; 2022), there is no influence of migration background on mobility here. Here, too, reference can be made once again to wild play (Mietzel, 2002), which can be observed across cultures, so that in principle all children have similar prerequisites in terms of mobility through this play behavior alone.

5.2 MobiScreen 8-10

Due to progressive physical development and the associated further development of motor skills and abilities (Willimczik, & Singer, 2009), it could be assumed here that the children can run through the course faster with increasing age.

In contrast to the study by Krombholz (1988), it can be seen that there are gender-specific differences in this age range. However, in contrast to the present study, Krombholz (1988) refers to motor skills and abilities.

With regard to developmental disorders, the results of Dincher (2023a) are confirmed here; children with a developmental disorder perform worse than healthy children.

The influence of BMI on performance is confirmed here, as in Albrecht (2016).

There is no significant influence of sports club membership. Gramespacher et al. (2024) only found such an influence for team sports, but not for individual sports. The non-significant influence here could be due to the composition of the sample, as half of the children play individual sports and only around a third play team sports - this would also refute their assumption that boys tend to play team sports and girls tend to play individual sports, as the number of boys and girls in the sample is almost the same.

The influence of the migration background is also not significant here, which in turn may be related to the explanation of the cross-cultural wild game as described by Mietzel (2002).

The non-significant influence of the type of school could be related to the composition of the sample. Reference can be made here to the proportion of active sports club members and their sporting activities of just under three hours per week.

6. Conclusions

Younger children in particular appear to benefit from being active in sports clubs in terms of mobility, while several factors play an important role for older children. Overall, the construct of mobility in the sense of the ICF appears to be dependent on only a few factors, such as age, gender and developmental disorder, which are also related to a certain extent to the development of motor skills, abilities and basic competencies, but also to socialization.

7. Prospects

Based on the results, further studies should investigate whether new cut-off values for total time need to be defined separately by gender (MobiScreen 6-8) and by age and gender (MobiScreen 8-10), as total time is the main criterion for conspicuousness. The MobiScreen 8-10 test version is currently being modified again for children between the ages of eight and ten. Validation studies are already underway. It might also be appropriate to create classes for the predictors, e.g. that the influence of the BMI is not determined on the basis of the measured raw value, but via the categories of underweight, normal weight and overweight. In the case of sports club membership, the influence of the sporting activity per week or the type of sport (team vs. individual vs. both or, if necessary, differentiation according to aesthetic, cgs, target shooting or rebound sport) could be examined.

Acknowledgment

The test assistants were financially supported by the German Sports Teachers' Association, Saarland Regional Association. Thanks to all the institutions that contributed to this study.

Declaration of interest

There are no competing interests to declare.

8. References

1. Albrecht, C. A. (2015). *Entwicklung und Einflussfaktoren der Entwicklung der motorischen Leistungsfähigkeit im Kindes- und Jugendalter. Befunde der MoMo-Längsschnittstudie. Dissertation*. Karlsruhe: Pädagogische Hochschule Karlsruhe. Doi: 10.5445/IR/1000053005.
2. Bentele, P. (2004). Psychomotorik im Kindergarten. In H. Köckenberger, & R. Hammer (eds.), *Psychomotorik. Ansätze und Arbeitsfelder. Ein Lehrbuch* (pp. 291-314). Dortmund: Verlag modernes Lernen.
3. Bös, K., & Mechling, H. (1992). Motorik. In P. Röthig, H. Becker, K. Carl, D. Kayser, & R. Prohl (eds.), *Sportwissenschaftliches Lexikon* (6th ed.; pp. 319-322). Schorndorf: Hofmann.
4. Dincher, A. (2023a). Motor Performance of Healthy Children Compared to Children with Developmental Disabilities. *Global Journal of Intellectual & Developmental Disabilities, 11*(4). 1-5. Doi 10.19080/GJIDD.2023.11.555820.
5. Dincher, A. (2023b). Reliability and Validity of a new ICF-CY-based Mobility Screening for Children from 8 to 10 years. *Journal of Applied Health Sciences and Medicine, 3*(5), 1-11. Doi: 10.58614/jahsm351.
6. Dincher, A. (2025). Motorische Leistung von Kindern in einer sportbewegten Grundschule im Vergleich zu Kindern in einer normalen Grundschule ohne Bewegungsprogramm. *Sportunterricht,* in press.
7. Dincher, A., & Dincher, L. M. (2022). First reliability aspects of a new ICF-CY-based mobility screening for 7 and 8 year old children. *International Journal of Medical Studies*, *7*(8), 1-9. https://ijmsonline.in/index.php/ijms/article/view/229.
8. Dincher, A., & Wydra, G. (2019). Erprobung eines Mobilitätsscreenings für Grundschüler der ersten und zweiten Klassenstufe. In A. Arampatzis, S. Braun, K. Schmitt, & Wolfarth (eds.), *Sport im öffentlichen Raum. 24. dvs-Hochschultag in Berlin, 18. - 20. September 2019. Abstracts* (Schriften der Deutschen Vereinigung für Sportwissenschaft, 282; p. 325). Hamburg: Czwalina.
9. Ferrari, I., Bretz, K., Czogalla, J., & Ennigkeit, F. (2024). Motorische Basiskompetenzen und Migrationshintergrund. In C. Herrmann, H. Seelig, & F. Ennigkeit (eds.), *Motorische Basiskompetenzen. Konstrukt, Erfassung und Anwendung* (Bildung und Sport, Schriftenreihe des Centrums für Bildungs for schung im Sport (CeBiS), Band 28; pp. 47-69). Wiesbaden: Springer VS. Doi: 10.1007/978-3-658-45759-4.
10. Gramespacher, E., Herrmann, C., Ennigkeit, F., Heim, C., & Seelig, H. (2020). Geschlechtsspezifische Sportsozialisation als Prädiktor motorischer Basiskompetenzen. Ein Mediationsmodell. *Motorik, 43*(2), 69-77. Doi:10.2378/mot2020.art13d.
11. Gramespacher, E., Herrmann, C., Ennigkeit, F., Heim, C. & Seelig, H. (2024). Geschlecht – ein Prädiktor für motorische Basiskompetenzen. Eine Studie mit MOBAK-Daten von Drittklässler*innen. In C. Herrmann, H. Seelig, & F. Ennigkeit (eds.), *Motorische Basiskompetenzen. Konstrukt, Erfassung und Anwendung* (Bildung und Sport, Schriftenreihe des Centrums für Bildungs for schung im Sport (CeBiS), Band 28; pp. 35-46). Wiesbaden: Springer VS. Doi: 10.1007/978-3-658-45759-4.
12. Gramespacher, E., Herrmann, C., & Seelig, H. (2022). Geschlechtsbezogenes Sport-engagement – ein Prädiktor für motorische Basiskompetenzen. Eine Analyse mit Daten von Erstklässler*innen. In G. Sobiech & E. Gramespacher (eds.), *Wir und die Anderen. Differenzkonstruktionen in Sport und Schulsport* (Schriften der Deutschen Vereinigung für Sportwissenschaft, Bd. 295, pp. 47-56). Feldhaus.
13. Grupe, O. (1984). *Grundlagen der Sportpädagogik. Körperlichkeit, Bewegung und Erfahrung im Sport* (3rd revised ed.). Schorndorf: Hofmann.
14. Herrmann, C., Heim, C., & Seelig, H. (2017). Diagnose und Entwicklung motorischer Basiskompetenzen. *Zeitschrift für Entwicklung spsychologie und Pädagogische Psychologie, 49*(4), 173-185.
15. Hollenweger, J., & Kraus de Camargo, O. (2013). *ICF-CY. Internationale Klassifikation der Funktionsfähigkeit, Behinderung und Gesundheit bei Kindern und Jugendlichen* (2nd reprint of 1st ed.). Bern: Hans Huber.
16. Krombholz, H. (1988). *Sportliche und kognitive Leistungen im Grundschulalter – Eine Längsschnittuntersuchung.* Frankfurt: Lang.
17. Kurz, D., Fritz, T., & Tscherpel, R. (2008). Der MOBAQ-Ansatz als Konzept für Mindeststandards für den Sportunterricht? In V. Oesterhelt, J. Hofmann, M. Schimanski, M. Scholz, & H. Altenberger (Hrsg.), *Sportpädagogik im Spannungsfeld gesellschaftlicher Erwartungen, wissenschaftlicher Ansprüche und empirischer Befunde. Jahrestagung der dvs-Sektion*

Sport pädagogik vom 7.-9. Juni in Augsburg (Schriften der Deutschen Vereinigung für Sport wissenschaft, 175; S. 97-106). Hamburg: Czwalina.

18. Mietzel, G. (2002). *Wege in die Entwicklungs psychologie.* Weinheim: PVU.
19. Müller, C., & Petzold, R. (2003). Was kann bewegte Grundschule wirklich bewegen? *sportunterricht, 52*(4), 101-107.
20. Roth, K. (1999). Die fähigkeitsorientierte Betrachtungsweise (Differentielle Motorikforschung). In K. Roth, & K. Willimczik (Hrsg.), *Bewegung swissenschaft* (S. 227-287). Reinbek: Rowohlt.
21. Starker, A., Lampert, T., Woll, A., Oberger, J., Kahl, H., & Bös, K. (2007). Motorische Leistungsfähigkeit. Ergebnisse des Kinder- und Jugendgesundheits surveys (KiGGS). *Bundesgesundheitsblatt, Gesundheits for schung, Gesundheitsschutz, 50*, 775-783. Doi: 10.1007/s00103-007-0240-8.
22. Ungerer-Röhrich, U., & Beckmann, G. (2002). Was „bewegt" die „ Bewegte Schule" hin sichtlich der motorischen Leistungsfähigkeit und der sozialen Kompetenz der Schülerinnen und Schüler? *sportunterricht, 51*(3), 73-77.
23. Werle, J., Woll, A., & Tittlbach, S. (2006). *Gesundheits för derung, Körperliche Aktivität und Leistungsfähigkeit im Alter.* Stuttgart: Kohlhammer.
24. Willimczik, K., & Singer, R. (2009a). Motorische Entwicklung: Konzeptionen und Trends. In J. Baur, K. Bös, A. Conzelmann, & R. Singer (eds.), *Handbuch Motorische Entwicklung* (Beiträge zur Lehre und Forschung im Sport, 106; 2nd, completely revised ed.; pp. 25-46). Schorndorf: Hofmann.
25. Worth, A. (2005). Bewegter Unterricht– eine Interventionsstudie in der Grundschule. In A. Gogoll (ed.), *Qualität im Schulsport: Jahrestagung der dvs-Sektion Sportpädagogik vom 10.–12. Juni 2004 im Landesinstitut für Schule in Soest* (pp. 142-147). Czwalina
26. Wydra, G., & Kaczmarek, C. (2017). Von der Fähigkeits- zur Mobilitätsorientierung in Gesundheits- und Rehasport. In H. Wäsche, G. Sudeck, R. S. Kähler, L. Vogt, & A. Woll (eds.), *Bewegung, Raum und Gesundheit. Beiträge der gemeinsamen Jahrestagung der dvs-Kommissionen Gesundheit sowie „Sport und Raum" vom 22. - 23. September 2016 in Karlsruhe* (Schriften der Deutschen Vereinigung für Sportwissenschaft, 267; pp. 111-119). Hamburg: Feldhaus.