

Recognizing The Importance of Physical Activity and Cultivating Body Posture Among Israeli-Arab Kindergarten Teachers

Iris Gil

Correspondence: Iris Gil, Shaanan College, Tel Hai College, Israel.

Received: June 1, 2022

Accepted: July 30, 2022

Online Published: August 2, 2022

doi:10.11114/jets.v10i4.5668

URL: <https://doi.org/10.11114/jets.v10i4.5668>

Abstract

Of the population in Israel, approximately 80% is Jewish and approximately 20% is Arab. In the first years following the establishment of the State of Israel, education in the Arab sector suffered from discrimination and neglect, and it appears that programs to reduce the gaps have only been introduced in recent years i.e., since 2007. The aim of the present study is to examine, in the Arab sector, kindergarten teachers' level of awareness of the overall importance of physical activity and its importance for cultivating correct posture. To this end, a qualitative study – interviews and category analysis – of eight Israeli-Arab kindergarten teachers was conducted. The study's findings and conclusions are that the kindergarten teachers who participated in the study had high awareness of the importance of physical activity, which should be maintained. However, their awareness of the importance of physical activity in kindergarteners for the cultivation of correct posture is very low, and there are a variety of ways to enrich them in this area.

Keywords: Israeli Arabs, physical activity, kindergartens, cultivating correct posture, kindergarten teachers

1. Introduction

1.1 Arab Education in Israel

The Arab education system in Israel is comprised of members from the Arab, Bedouin, Circassian, and Druze populations. In 2016-2017, about 545,000 students were enrolled in the Arab education system, constituting about 24% of all students in Israel. In 2017, 20% of the students in the Arab education system attended kindergartens (Winninger, 2018). Despite the accelerated rate at which the Arab education system has developed and modernized since the establishment of the State of Israel -- with five-year-plans for resource allocation to the Arab sector having been established in 2007 -- deep gaps still exist within the Israeli education system. These gaps are manifested in resources; budgets allocations for teaching hours; teaching infrastructures that do not enable meaningful learning; and a shortage of classrooms, physical infrastructures, and digital equipment (Haddad Haj-Yahya & Rudnitzky, 2018). These gaps are also evident in preschool education: Only 18% of the Arab population, aged 0-2, attend educational frameworks, in contrast with 68% of the Jewish population of the same age (Haddad Haj-Yahya et al., 2021).

Recent years have, however, seen significant improvement. In 2015, a five-year plan for the economic development of Arab localities received government approval. The decision stipulated that the rate of allocations would be ILS 650 million (approx. USD 207 million) for five years, from 2016 to 2020 (Haddad Haj-Yahya & Rudnitzky, 2018). Moreover, the reduction in budget gaps was followed by improvements in the standard of infrastructures in the Arab education system, and gaps in student achievements have begun to narrow (Haddad Haj-Yahya et al., 2021).

While it may be stated that the Israeli government's decision in 2015 led to a significant and extremely positive reduction in gaps, there are gaps that continue to exist. According to studies conducted in recent years, one such gap between the two population groups is in physical activity (Harel-Fisch et al., 2014; Harel-Fisch et al., 2016; Ministry of Culture and Sport and Ministry of Health, 2012).

1.2 Physical Activity

Physical activity is defined as any bodily movement that requires energy and is performed by contracting skeletal muscles (Israel Heart Society, 2012). Most of the data in the world show that the majority of the world's population does not engage in sufficient physical activity. Absence of physical activity and the adoption of a sedentary lifestyle are serious causes for concern among professionals in the field and constitute a significant risk factor for disease and mortality (Bar Sinai, 2011; D'Isanto et al., 2017; Gonzalo-Almorox & Urbanos-Garrido, 2016; Hallal et al., 2012; WHO, 2020).

Some of the physical benefits of physical activity include slowing illness progression, improving physical fitness, contributing to maintaining healthy body weight, strengthening and maintaining bone density, increasing muscle strength, maintaining suppleness, reducing surgery risks, strengthening the immune system, reducing frequency of falls in adults, and protecting against certain forms of cancer (Netz & Raviv, 2003; Scheinowitz, 2012; Shoval & Shkedi, 2007).

There are also many psychological benefits to participating in physical activity. For example, it leads to feelings of enjoyment and improves mood, it helps to improve self-image and self-confidence, and it alleviates tension (Mughtar & Mesika, 2020; Shahar-Levy, 2004).

Motor learning in kindergarten children is important for several reasons: 1) In the physical aspect, it leads to the acquisition of movement skills and improving fitness (Bar Sinai, 2011; Ministry of Education, 2007), as was found in Madić et al.'s (2018) study. These researchers showed an improvement in fitness (strength, reaction speed, and coordination) among 56 girls aged 5.08 years, following 6-minute training (running, walking, climbing, etc.) that was conducted twice a week for six months;

2) In the emotional aspect, it increases sense of self-efficacy and positive body image (Gonzalo-Almorox & Urbanos-Garrido, 2016; Ratzon, 2004), as found in Morano et al.'s (2019) study. Here, 14,035 children, aged 6-7, participated in the study and it was found that, the more the children improved their physical skills and enjoyed themselves during the process, the easier it was to encourage them to adopt an active and healthy lifestyle;

3) In the social aspect, motor learning in kindergarten children improves their communication abilities (Shoval et al., 2019; Shoval & Shkedi, 2007); and 4) in the cognitive aspect, it improves deductive reasoning skills, classification abilities, and more (Chen-Zimmerman et al., 2019; Ministry of Education, 2007; Shoval & Shkedi, 2007; Zavdy, 2013; WHO, 2020).

1.3 Gaps Between the Jewish and Arab Populations in Physical Activity Participation

A survey of physical activity habits in Israel (Ministry of Culture and Sport and Ministry of Health, 2012), which included 1,579 Jewish and 1,385 Arab respondents, examined the degree to which they engaged in non-competitive physical activity. The desired degree was defined as low-intensity activity for (at least) 150 minutes a week, or high-intensity activity for (at least) 75 minutes a week.

Table 1 presents some of the survey data, reflecting the gaps in physical activity levels between the Arab and Jewish populations (in favor of the Jewish population).

Table 1. Gaps in physical activity participation – General population

Survey parameter	Jewish population	Arab population
Physical activity in the year before the survey	Women – 64.9% Men – 70.6%	Women – 51.0% Men – 55.8%
Walking as a physical activity in the year before the survey	Women – 37.9% Men – 29.5%	Women – 35.3% Men – 28.3%
Physical activity two weeks before the survey	Women – 56.5% Men – 61.2%	Women – 38.3% Men – 47.1%
Regularly walking up stairs	Women – 34.3% Men – 42.8%	Women – 59.1% Men – 61.5%

(From: Ministry of Culture and Sport and Ministry of Health 2012)

In 2016, an Israeli survey was published that presented Arab and Jewish children's and adolescents' (aged 7-11) rates of participation in physical activity and sports in various contexts (Harel-Fisch et al., 2016). This survey's findings attest to differences and gaps between Jewish and Arab adolescents in their attitudes towards physical activity, but not necessarily in their actual engagement in physical activity.

Table 2. Physical activity in various contexts – Adolescents

Parameter	Arab sector Frequency	Jewish sector Frequency
No physical activity as a risk factor for hazardous drinking	Low	High (2.1 times higher)
No physical activity as a risk factor for drug abuse	Low	High (1.7 times higher)
No physical activity following non-physically active father	High	Low

(From: Harel-Fisch et al., 2016)

From these two studies on the degree, intensity, and attitude to physical activity, a gap emerges between the Jewish and Arab populations in Israel in physical activity, as well, with the Jewish population devoting more resources to engaging in physical activity. However, in these studies, body posture, one of the beneficial components of physical activity, was not examined.

1.4 Posture

Gil (2013), Feldenkrais (1967), Solberg (2013), and the Ministry of Education (2007) refer to correct body posture as the constant organization of the body, paying attention to the interaction between the limbs, and maintaining a position from which one can move freely. Figure 1 shows the location of the line of gravity in correct posture in two states (Gil, 2013; Mishori, 2018; Tam, 2009). Correct posture positively affects the health of joints, bones, muscles, the respiratory system, and blood circulation (Ministry of Education 2007).

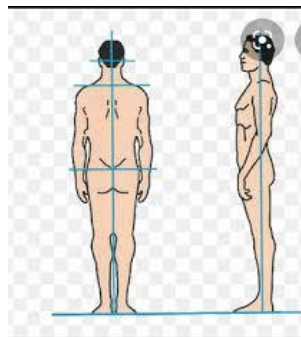


Figure 1. Line of gravity in correct posture, back and side views

Although people can have good posture, there are, nevertheless, a multitude of reasons for the development of postural disorders, including problematic movement and rest habits, and persistent effort against gravity and hypermobility of the spine (Chaikin-Bentor, 2016; Gil, 2013; Ministry of Education, 2007). Postural deformities manifest in the skeleton (Mishori, 2018), muscles (shortening or elongating), and range of joint motion. One of the best ways to improve posture is physical activity (Gil, 2013; Mizrachi & Kafri, 2017; Solberg, 2013; Tam, 2009).

The efficacy of general physical activity for kindergarten children and improving posture among adults (Briggs et al., 2007; Drzał-Grabiec et al., 2014; Gil, 2013; González-Gálvez et al., 2019; Sardar et al., 2019; Sinaki et al., 2005) and school-aged children (Drzał-Grabiec et al., 2014; Ko & Kang, 2017; Samaei et al., 2012) have been extensively researched and documented. However, very little research has been conducted that examines the effect of physical activity on kindergarten children's posture, let alone in different populations. The question is what and how much of the knowledge on physical activity, specifically on cultivating posture, reaches kindergarten teachers whose education does not receive optimal investment, such as those in the Arab sector in Israel.

1.5 Research Aims

Consequently, the principal aim of the present study is to examine, among kindergarten teachers in the Arab sector, their level of awareness of the necessity of physical activity in general for kindergarten children, and the necessity of physical activity as a tool for cultivating and maintaining correct posture in kindergarten children.

1.6 Research Questions

1. What is the level of the kindergarten teachers' awareness of the importance of physical activity for children in kindergarten – physically, emotionally, cognitively, socially, and in promoting health?

2. What is the level of the kindergarten teachers' awareness of the importance of physical activity as a tool for cultivating correct posture in kindergarten children?

2. Method

2.1 Study Design

A qualitative paradigm approach facilitated an original and broad understanding of the participants' subjective perceptions of the research topic, and an understanding of deeper personal motivations (the kindergarten teachers' personal body image, their personal history in performing [or not] physical activities, environmental influences, and more) that can influence their perception of physical activity in the kindergarten classroom (Givton, 2001).

2.2 Participants

The study participants were 8 kindergarten teachers who work in various kindergartens in an Arab locality in Israel. They all teach children, aged 4-5, and took a course on physical activity in kindergartens during their BA studies, but did not receive specific training on cultivating correct posture.

Table 3. Participant data

No.	Kindergarten teacher's age	Years teaching kindergarten
1	36	12
2	37	10
3	39	14
4	39	12
5	40	16
6	42	17
7	36	10
8	41	15

2.3 Procedures

The research data were collected in 2018, revealing the kindergarten teachers' perceptions and awareness levels concerning the overall importance of physical activity. Since the responses obtained on posture raised concerns that the subject had not been understood, a second stage of research was prepared. An additional meeting was held with each of the kindergarten teachers individually, in which the notion of cultivating correct posture was explained to her, as well as how to identify postural disorders. This was followed by a personal, semi-structured interview consisting of six questions, in which data were collected on cultivating correct posture.

2.4 Measures

The research tool employed in the study was a personal, semi-structured interview including ten questions, which was prepared especially for the present study. The interview focused on the kindergarten teachers' awareness of the overall importance of physical activity for kindergarten children, and its specific importance for cultivating the children's posture. For example: "Why do you think physical activity in kindergarten is important?"; "Which physical activities are recommended in kindergarten?"

2.5 Statistical Analysis

When all of the interviews had been completed, the contents were processed in accordance with grounded theory (coding and development, focused coding, and super-coding; Dushnik, 2011). The open nature of the research tool was conducive to flexibility and change, which were indeed necessary in order to obtain the participants' responses (Shkedi, 2003).

3. Results

Analysis of the interviews yielded two main categories: 1) the kindergarten teachers' awareness of the importance of physical activity in kindergarten, and 2) the kindergarten teachers' awareness of the importance of physical activity as a tool for cultivating correct posture.

Table 4. Analysis of findings – Categories and subcategories

Categories	Category 1: The kindergarten teachers' awareness of the importance of physical activity in kindergarten	Category 2: The kindergarten teachers' awareness of the importance of physical activity as a tool for cultivating correct posture
Subcategory 1	Contribution of physical activity to kindergarten children's physical abilities	The kindergarten teachers' general experience in the subject of cultivating posture
Subcategory 2	Contribution of physical activity to kindergarten children's emotional abilities	The kindergarten teachers' awareness of the relevant components for cultivating posture in kindergarten
Subcategory 3	Contribution of physical activity to kindergarten children's additional abilities	

3.1 Category 1: The Kindergarten Teachers' Awareness of the Importance of Physical Activity in Kindergarten

3.1.1 Contribution of Physical Activity to Kindergarten Children's Physical Abilities

All of the kindergarten teachers who were asked about the contribution of physical activity to kindergarten children stated the physical contribution, first and foremost. From the findings, it can be seen that the kindergarten teachers have a high level of awareness of the importance of physical activity for kindergarten children and that they attribute multiple benefits to it. For example: "It's important for kindergarten to strengthen their muscles"; "Physical activity is important for the child's physical development and for educating them on correct movement"; "It aids the child's development"; "It satisfies the children's natural needs, from a physical point of view, in a correct and healthy way".

Since the kindergarten teachers noted that the main contributions of physical activity are indeed physical, such as strengthening muscles, helping development, satisfying needs, and more, it may be concluded that they attribute great importance to physical activity and its contribution to improving several physical components. Of all the abilities mentioned by the kindergarten teachers, the two main ones were: correct and healthy development of the body and its movements, and strengthening the muscles.

3.1.2 Contribution of Physical Activity to the Kindergarten Children's Emotional Abilities

All but one of the kindergarten teachers stressed the importance of physical activity for development of the children's emotional abilities: "...releases tension, enjoyment, concentration"; "Improves the children's self-image, directly contributes to their mental health, and also affects their general mood"; "Strengthens... the child's self-esteem". According to the findings, and their use of words like "enjoyment", "development", and "esteem", it appears that the kindergarten teachers attribute great importance to physical activity's contribution to development of the children's emotional abilities, especially development of their self (confidence, image, esteem, and more).

3.1.3 Contribution of Physical Activity to Additional Abilities of Kindergarten Children

Half of the kindergarten teachers also mentioned the importance of physical activity for additional health areas. During their interviews, they demonstrated their understanding that physical activity is key for cognitive development: "Enriching knowledge about body and movement"; "Additionally, physical activity helps children learn about themselves"; "...get to know their body". Also, statements such as, "social development" and "forging social connections" attest to the importance that the kindergarten teachers place on physical activity for the kindergarten children's social development. Furthermore, their understanding of the contribution of physical activity to promoting overall health is evident in statements such as: "...helps to encourage physical activities and a healthy lifestyle"; "...trains the children for a healthy future, encouraging and promoting an active and healthy lifestyle".

To summarize, the participants attribute very high importance to physical activity as a means for developing the children's physical and emotional abilities, albeit to varying degrees. Their brief reference to other areas can be categorized from the most to the least important, in the following order: cognitive development, social development, and, lastly, contributing to a healthy lifestyle.

3.2 Category 2: The Kindergarten Teachers' Awareness of the Importance of Physical Activity as a Tool for Cultivating Correct Posture

This subject was examined twice, since all of the respondents failed to mention cultivating correct posture in the first round of interviews. Instead, they stated, for example: "It calms the children, releases tension, and they enjoy it"; "The children can concentrate better when they are healthy". This raised concerns that the participating kindergarten teachers did not understand the notion of cultivating correct posture. In the second round of interviews, the kindergarten teachers

were given an explanation about correct posture, external signs of postural problems, and the possibility of improving the children's posture by means of physical activity.

3.2.1 The Kindergarten Teachers' General Experience With Cultivating Correct Posture in Kindergarten

After the explanation, all of the kindergarten teachers claimed that they are familiar with the subject. In response to further probing questions (e.g., "Do you know how to help the children maintain their posture?"), five kindergarten teachers responded along the lines of: "Yes, I give them exercises that help posture". Only three kindergarten teachers were able to provide more details, such as: "I give them various strengthening/muscle strengthening exercises", and "I encourage general physical activity".

Based on their responses, it appears that the kindergarten teachers had difficulty answering the following question: "Do you implement the subject in the kindergarten? If so, how do you do this?" Four responded that they transfer the information to an external body or professionals who are invited to the kindergarten ("I consult with the responsible body"). By contrast, four of the kindergarten teachers said that they try to contend with the problems on their own by means of general attentiveness, and one stated that she pays attention to correct sitting and standing.

These responses contradict the confident statements they provided concerning their familiarity with the subject, as they demonstrate a lack of knowledge and ability to understand the importance of their role and their significant ability to contribute to cultivating the kindergarten children's correct posture.

3.2.2 The Kindergarten Teachers' Awareness of the Relevant Components for Cultivating Posture in Kindergarten

To examine, in greater depth, the kindergarten teachers' awareness of the most basic principles of cultivating correct posture among kindergarten children, they were asked four specific questions on each of the main muscle groups that, when strengthened, contribute to posture: back, abdominal, legs, and arms (Gil, 2013; Solberg, 2013; Tam, 2009). In response to all four questions, all of the kindergarten teachers said "yes", strengthening the specific group of muscles referred to in the question indeed contributes to cultivating correct posture.

However, it was only in response to the first question, which addressed the back muscles, that five kindergarten teachers were able to provide an example of a relevant exercise. For instance, one teacher stated: "yes, of course, I give them an exercise in which they put two straight arms against the wall at a 90-degree angle, and stand one or two steps away from the wall, and then bend their elbows".

In the following questions, on strengthening abdominal, leg, and arm muscles, the repertoire of relevant exercises became increasingly meager, with some responses being "like the previous exercise", and other responses attesting to a very poor ability to distinguish between different muscle groups and a lack of understanding concerning which exercise is designed to strengthen which particular muscle group (e.g., "Yes, they do rabbit hops, or all kinds of animal movements, which work on the abdomen"). Here, too, a contradiction is revealed between the "yes" and "of course" responses provided to whether they are aware that strengthening a specific muscle group indeed contributes to cultivating correct posture, and their difficulty in providing a relevant example of an exercise that strengthens each of the relevant groups.

In summary, based on the kindergarten teachers' low ability to contend with the issue in the kindergarten themselves, and the contradiction between their positive responses and the lack of examples provided, it may be stated that the kindergarten teachers have very low awareness of the subject of cultivating correct posture in kindergarten.

4. Discussion

There are extensive findings on the importance of physical activity at any age (D'Isanto et al., 2017; Gonzalo-Almorox & Urbanos-Garrido, 2016; Hallal et al., 2012; WHO, 2020), including preschool children (Bar Sinai, 2011; D'Isanto et al., 2017; Ministry of Education, 2007; Ratzon, 2004; Riwkes Spectorman, 2011; Shoval & Shkedi, 2007). There are also extensive findings on the importance of physical activity in maintaining and improving correct posture among adults and school-age children (Gil, 2018; González-Gálvez et al., 2019; Sardar et al., 2019; Sinaki et al., 2005).

However, the degree to which these findings manifest in practice in kindergartens is unclear. The present study examined the awareness of Arab kindergarten teachers from the North of Israel regarding the importance of performing physical activity in kindergarten, and their awareness of the importance of performing physical activity for maintaining and improving the children's posture.

4.1 First Research Question

With reference to the first research question regarding the kindergarten teachers' level of awareness of the importance of physical activity for the kindergarten children, the findings show that the kindergarten teachers indeed attribute very high importance to physical activity and its contribution to improving several important physical aspects.

The high importance the kindergarten teachers attributed to the contribution of physical activity to strengthening muscles, proper development of the body, and acquisition of movements or skills is consistent with many of the references described in the theoretical background section (Cohen-Nachman & Madkar, 2001; Madić et al., 2018; Morano et al., 2019; Netz & Raviv, 2003; Scheinowitz, 2012; Shoval & Shkedi, 2007), and with the findings of the study conducted by Harel-Fisch et al. (2016), showing that physical activity is appreciated and enjoyed in Arab society.

The reason that all the kindergarten teachers recognized the high importance of physical activity for physical aspects possibly stems from decades of “modernization”: exposure to the media, research, prevalent outlooks, and academic studies. The fact that the importance of physical activity has become a clear and absolute truth among different populations in Israel is encouraging.

Regarding the importance of physical activity for the kindergarten children’s emotional well-being, the study found that the kindergarten teachers attribute high importance to the contribution of physical activity to the development of the children’s mental-emotional abilities. Like Shahar-Levy (2004), most of the kindergarten teachers interweave the physical and emotional benefits into a single sentence, as a single aim (“...and strengthens the child’s body and self-esteem...”). Some of the words and phrases the kindergarten teachers used to describe the contribution of physical activity to emotional aspects are identical in meaning to those that appear in the literature: “enjoyment and improved moods”, “improved self-image and self-confidence”, “improved self-esteem and self-perception”, and more (Shoval & Shkedi, 2007; Zavdy, 2013). However, some of the “benefits” that can be gained, as presented in the literature, were not mentioned by the kindergarten teachers, specifically an optimistic outlook on life, reducing the risk of developing depression and anxiety, acquiring confidence, facing challenges, perception of efficacy, and positive body image (Ministry of Education, 2007).

With regard to the effects of physical activity on the children’s emotional aspects as well, it appears that the concept regarding the necessity of physical activity is increasingly taking root and becoming established, but it is not yet as deeply rooted as the physical aspects. In the present study, this is evidenced by the fact that not all of the kindergarten teachers referred to the emotional aspect, when responding to the question regarding the aim of physical activity in kindergarten. Additionally, the participants’ repertoire of responses regarding the emotional aspect was relatively poor and mainly focused on development of the children’s self.

While considerable reference is made in the literature to development of the self, in this study, the respondents did not mention other components – enjoyment, improved mood, fostering optimism, developing values of discipline and commitment, reducing depression and anxiety, and more (Ministry of Education, 2007; Shoval & Shkedi, 2007). It appears, therefore, that the kindergarten teachers are aware of the positive effects of physical activity in this area, but it is yet to become firmly established in their consciousness or discourse.

This finding may be attributed to the fact that the Israeli environment, in general, does not accord the same legitimacy to emotional health as it does to physical health and the human body (albeit, this trend is evolving in recent years). In this Israeli reality, it appears that in the Arab society, which is traditional and patriarchal (Masry-Herzallah & Arar, 2019), and in which the governing codes include interdependence between people, dependence on religious figures, and inequality, it is even more difficult to draw a connection between physical activity and proper development of the children’s emotions.

Half of the participants referred positively to the effects of physical activity on the children’s cognitive development (e.g., familiarity with their body, familiarity with movements, developing thinking ability during play, developing positive body awareness). This is consistent with existing literature that demonstrates the contribution of physical activity to kindergarten children’s cognitive development (Feldenkrais, 1967; Ministry of Education, 2007; Riwkes Spectorman, 2011; Shoval & Shkedi, 2007; Bhattacharjee & Johnson, 2015).

The fact that half of the kindergarten teachers did not mention the effects of physical activity on cognitive development may be attributed to the prevailing mindset in some education system institutions. Regrettably, we have witnessed a persisting phenomenon, whereby physical education lessons are cancelled at certain times – in an effort to catch up on study material ahead of matriculation exams, studying via Zoom during the Covid pandemic – without understanding the positive contribution and increased importance of physical activity during times of tension in helping to relieve stress (Chen-Zimmerman et al., 2019; Muchtar & Mesika, 2020), actually accelerating blood circulation, and aiding concentration and learning (Ministry of Education, 2007; WHO, 2020).

The sparsity of the kindergarten teachers’ responses concerning the importance that they attribute to physical activity’s effects on promoting health and the social dimension indicates that these subjects need to be further addressed, and additional information needs to be provided to kindergarten teachers, so that they recognize their importance.

It is hard to understand why some of the kindergarten teachers accorded importance to these three areas – cognitive

development, social development, and healthy lifestyle – while others did not. There are three possible reasons for these findings: The first is associated with the kindergarten teachers' personality, inclinations, and preferences; the second is associated with their intellectual abilities and, perhaps, their personal and professional life experience; and the third is associated with their degree of exposure to the relevant knowledge. There is a very wide range of professional enrichment among the participating kindergarten teachers, which may help to explain this difference.

In summary, with regard to the first research question concerning the kindergarten teachers' awareness of the importance of physical activity for kindergarten children, the present study found that they have a very high level of awareness regarding the importance of physical activity for kindergarten children's physical aspects. It may even be stated that they have maximal awareness, since all of the kindergarten teachers attributed a physical contribution to physical activity. Their awareness of the importance of physical activity for the emotional aspect was also high, although one kindergarten teacher did not attribute importance to it. Additionally, the kindergarten teachers' repertoire of verbal expressions in this area was relatively poor. However, their awareness of the contribution of physical activity to cognitive, social, and health promotion aspects was medium. Therefore, generally speaking, it can be concluded that the kindergarten teachers have a high level of awareness of the importance of physical activity.

4.2 Second Research Question

With regard to the second research question concerning the kindergarten teachers' awareness of the importance of physical activity for cultivating correct posture in kindergarten-aged children, it is worthy of note that, when the subject was initially examined, their responses attested to a lack of understanding of the concept. In the second stage, after receiving an explanation on the subject, it appears that they indeed understood the concept and the subject itself. However, based on the study findings obtained in the second stage, it may be concluded that the kindergarten teachers' awareness of cultivating correct posture among kindergarten children is very low.

One reason for their lack of awareness is indeed failure to provide sufficient educational foundations in the schools (Haddad Haj-Yahya et al., 2021; Haddad Haj-Yahya & Rudnitzky, 2018). Another possible reason is that, in their training to become kindergarten teachers, they simply were not introduced to the subject. The subject of physical activity for the purpose of cultivating and maintaining correct posture as part of a holistic view of children's development in kindergarten is part of the curriculum in Israel (Chen-Zimmerman et al., 2019; Ministry of Education, 2007). It may be assumed that, had they studied the subject, they would not have any difficulty in understanding and knowing it, and would perhaps also know how to incorporate it into the physical activity in the kindergarten.

The conclusions and recommendations in this regard are: (1) An examination needs to be conducted to clarify whether the subject is explained to school students (Arab and Jewish alike) as an integral part of physical education lessons in school; (2) Kindergarten teachers-in-training need to be taught about correct posture, in general, how it develops, and how to maintain it during kindergarten hours, in order to prevent future damage. Knowledge needs to be provided to kindergarten teachers on how to incorporate the subject into their daily work routines. This can be achieved by means of special activities, such as specific lesson plans to strengthen relevant muscles, instructional games on how to hold the body properly, and instructions during routine activities in the classroom. For example, sitting on stools without a backrest and at a height that allows the children's feet to reach the floor.

In addition, the trend of equal budget allocations in the Arab education system needs to continue in all of its various stages (Masry-Herzallah & Arar, 2019). Budgets should enable improvement of physical and digital infrastructures, improvement in the quality of new teachers, expanding their development tracks and preacademic preparatory courses, and adapting school- and kindergarten-teacher education programs to the reality of the twenty-first century. Also, attention needs to be given to quality issues, such as adapting the curriculum to the culture of Arab children and finding ways to achieve equal opportunity in education. All this will benefit not only Arab society in Israel, but Israeli society as a whole (Haddad Haj-Yahya & Rudnitzky, 2018; Haddad Haj-Yahya et al., 2021).

There are a few limitations of this study that should be noted. The main limitation is that a group of Jewish female kindergarten teachers was not included in the study. Had such a group been included, it would have allowed a comparison between the two participant groups and broader, more grounded findings and conclusions could have been obtained. In addition, a larger number of participants would have been desirable.

5. Conclusions

The findings of the present study indicate that there is no significant lack of awareness among the participating kindergarten teachers of the overall importance of physical activity and its importance for physical aspects among kindergarten children. The importance of physical activity for the children's emotional aspect is also sufficiently understood. However, it appears that its importance for cognitive, social, and health promotion aspects is understood – granted, not extensively or comprehensively by any means -- by only some of the participating kindergarten teachers.

With regard to the cultivation of correct posture, the findings indicate a significant lack of understanding among the participating kindergarten teachers, who were completely unfamiliar with the subject. The problem may stem from lack of knowledge from their own childhood and physical education at school, as well as during their kindergarten-teacher training in higher education institutions.

There is no doubt that further research on this subject is needed. Such studies can explore additional fields of knowledge that kindergarten teachers are meant to learn and assimilate during their training, include a larger number of participants, combine quantitative and qualitative analyses, and/or conduct comparisons between different populations. Ultimately, it is important to examine whether kindergarten teachers understand the basic components of physical activity and physical education, and the important body systems involved in movement (bones, muscles, joints, nerves, heart-lung, balance, and posture). Thus, it is essential that ways be found to implement the excellent practical recommendations that appear in the professional literature (Ministry of Education, 2007) and to reduce the gaps between them and the “field”.

References

- Bar Sinai, R. (2011). *Nua nua yeled* [Move, move, child]. Retrieved from: <http://www.dyellin.ac.il>
- Bhattacharjee, Y., & Johnson, L. (2015). The first year. *National Geographic*, 227(1), 58-77.
- Briggs, A. M., Van Dieën, J. H., Wrigley, T. V., Greig, A. M., Phillips, B., Lo, S. K., & Bennell, K. L. (2007). Thoracic kyphosis affects spinal loads and trunk muscle force. *Physical Therapy*, 87(5), 595-607. <https://doi.org/10.2522/ptj.20060119>
- Chaikin-Bentor, N. (2016). *Correct movement, optimal posture, and walking*. Narkisim.
- Chen-Zimmerman, N., Rosenstreich, E., & Shoval, E. (2019). The right to move: The contribution of experiencing movement to cognitive development, learning, and academic achievements. In *The right to move*, edited by E. Shoval, 11-15. MOFET Institute.
- Cohen-Nachman, S., & Madkar, A. (2001). The effect of learning strategies on learning new motor task among preschool children. *Israeli Journal of Occupational Therapy*, 10, 23-41.
- D'Isanto, T., Manna, A., & Altavilla, G. (2017). Health and physical activity. *Sport Science*, 10(1), 100-105.
- Drzał-Grabiec, J., Snela, S., Rykała, J., Podgórska, J., & Truszczyńska, A. (2014). The influence of elongation exercises on the anterior-posterior spine curvatures. *Biomedical Human Kinetics*, 6(1), 1-4. <https://doi.org/10.2478/bhk-2014-0001>
- Dushnik, L. (2011). Data analysis in qualitative research: A proposal for four guiding principles. *Shvilei Mekhkar*, 17, 137-143.
- Feldenkrais, M. (1967). *abilities (Awareness Through Movement)*. Feldenkrais Institute.
- Gil, I. (2013). *A new educational program to improve posture and quality of life among students by means of the Feldenkrais method and a new program: MAP – Motion and Posture* (PhD diss.) (Unpublished). The Wingate Institute.
- Gil, I. (2018). A new educational program to improve posture and quality of life among students by means of the Feldenkrais method and a new program: MAP – Motion and Posture. *Journal of Education and Training Studies*, 6(11), 1-11. <https://doi.org/10.11114/jets.v6i11.3582>
- Givton, D. (2001). Grounded theory: The meaning of data analysis process and theory construction in qualitative research. In *Genres and traditions in qualitative research*, edited by N. Sabar Ben-Yehoshua, 257-306. Dvir.
- González-Gálvez, N., Gea-García, G. M., & Marcos-Pardo, P. J. (2019). Effects of exercise programs on kyphosis and lordosis angle: A systematic review and meta-analysis. *PloS One*, 14(4). <https://doi.org/10.1371/journal.pone.0216180>
- Gonzalo-Almorox, E., & Urbanos-Garrido, R. M. (2016). Decomposing socio-economic inequalities in leisure-time physical inactivity: The case of Spanish children. *International Journal for Equity in Health*, 15(1), 106. <https://doi.org/10.1186/s12939-016-0394-9>
- Haddad Haj-Yahya, N., & Rudnitzky, A. (2018). *The Arab education system in Israel: Present situation and future challenges*. Israel Democracy Institute/Etz Hasadeh.
- Haddad Haj-Yahya, N., Saif, A., Kasir, N., & Fargeon, B. (2021). *Master plan for employment in Arab society: Welfare in Arab society – poverty, government policy, and helplessness of the local authorities*. Israel Democracy Institute.
- Hallal, P. C., Andersen, L. B., Bull, F. C., Guthold, R., Haskell, W., & Ekelund, U. (2012). Global physical levels:

- Surveillance progress, pitfalls, and prospects. *Lancet*, 380(9838), 247-257.
[https://doi.org/10.1016/S0140-6736\(12\)60646-1](https://doi.org/10.1016/S0140-6736(12)60646-1)
- Harel-Fisch, Y., Reis, Y., Shtainmetz, N., Lubell, S., Walsh, S., Boniel-Nissim, M., & Tessler, R. (2016). *Physical activity and sport among youth in Israel. Summary of findings of the 1st national survey. HBSC Israel report*. International Research Program on Adolescent Wellbeing and Health, School of Education, Bar-Ilan University.
- Harel-Fisch, Y., Walsh, S., Shtainmetz, N., Lubell, S., Reis, Y., Tessler, R., & Habib, J. (2014). *Youth in Israel: Health, emotional and social wellbeing, and patterns of risk behavior among youth in Israel. Summary of findings of the 7th survey, analysis of trends in 1994-2014, and an international comparison*. Bar-Ilan University and Ministry of Health.
- Israel Heart Society, (2012). *Physical activity for primary and secondary prevention of cardiovascular disease*. Israel Medical Association.
- Ko, K. J., & Kang, S. J. (2017). Effects of 12-week core stabilization exercise on the Cobb angle and lumbar muscle strength of adolescents with idiopathic scoliosis. *Journal of Exercise Rehabilitation*, 13(2), 244-249.
<https://doi.org/10.12965/jer.1734952.476>
- Madic, D., Cvetkovic, M., Popovic, B., Marinkovic, D., Radanovic, D., & Trajkovic, N. (2018). Effects of developmental gymnastics on motor fitness in preschool girls. *Physical Education and Sport*, 16(1), 11-18.
<https://doi.org/10.22190/FUPES180122002M>
- Masry-Herzallah, A., & Arar, K. (2019). "Gender, school leadership and teachers' motivations: The key role of culture, gender and motivation in the Arab education system. *International Journal of Educational Management*, 33(6), 1395-1410. <https://doi.org/10.1108/IJEM-02-2019-0054>
- Ministry of Culture and Sport, and Ministry of Health, (2012). *Survey of physical activity habits in Israel*.
- Ministry of Education, (2007). *Early childhood physical education curriculum: For state-education and religious state-education kindergartens*. Ministry of Education, Pedagogical Secretariat Curriculum Development Division.
- Ministry of Health, (2011). *Healthy behaviors: Encouraging physical activities*. Ministry of Health.
- Mishori, D. (2018). *Firmness (Firmeza): Meditations on first philosophy and environmental ethics*. Graff.
- Mizrachi, N., & Kafri, R. (2017). Principles of the Pilates method and its effect on low back pain, pelvic floor function, and posture: A systematic review of the literature. *JIPTS-Journal of the Israeli Physiotherapy Society*, 19(1), 38-52.
- Morano, M., Bortoli, L., Ruiz, M. C., Vitali, F., & Robazza, C. (2019). Self-efficacy and enjoyment of physical activity in children: Factorial validity of two pictorial scales. *Journal of Physical Activity and Health*, 7(7402).
<https://doi.org/10.7717/peerj.7402>
- Muchtar, O., & Mesika, D. (2020). Sport as a way of coping with stress and anxiety among athletes in the Otef Aza (Gaza envelope) communities. *Ruach Hasport*, 6, 1-14.
- Netz, Y., & Raviv, S. (2003). Personal incentives to exercise in Israeli adults. *Gerontologia-Journal of Aging Studies*, 1(2), 63-86.
- Ratzon, M. (2004). *Child development in early childhood: Moving, sensing, and learning in an active environment*. Barkai.
- Riwkes Spectorman, M. (2011). *Developmental movement: Gross motor development in infancy and early childhood*. Self-published.
- Samaei, A., Bakhtiary, A. H., Elham, F., & Rezasoltani, A. (2012). Effects of genu varum deformity on postural stability. *International Journal of Sports Medicine*, 33(6), 469-473. <https://doi.org/10.1055/s-0031-1301331>
- Sardar, Z. M., Ames, R. J., & Lenke, L. (2019). Scheuermann's kyphosis: Diagnosis, management, and selecting fusion levels. *JAAOS-Journal of the American Academy of Orthopedic Surgeons*, 27(10), 462-472.
<https://doi.org/10.5435/JAAOS-D-17-00748>
- Scheinowitz, M. (2012). Physical activity for prevention of heart disease: From theory to practice. *Eureka*, 34, 1-8.
- Shahar-Levy, Y. (2004). *A body-movement-mind paradigm for movement therapy and psychophysical analysis of emotive movement (2nd ed.)*. Self-published.
- Shkedi, A. (2003). *Words that try to touch: Qualitative research – theory and application*. Ramot.
- Shoval, E., & Shkedi, H. (2007). The importance of physical education in early childhood. *Hagigei Giva*, 13, 47-65.

- Shoval, E., Binstock, O., & Sharir, T. (2019). The contribution of experiencing movement to cultivating emotional-social competence and to processes of creating optimal kindergarten climate. In *The right to move*, edited by E. Shoval, 7-11. MOFET Institute.
- Sinaki, M., Hughes, C., Larson, D., & Kaufman, K. (2005). Balance disorder and increased risk of falls in osteoporosis and kyphosis: Significance of kyphotic posture and muscle strength. *Osteoporosis International*, 16(8), 1004-1010. <https://doi.org/10.1007/s00198-004-1791-2>
- Solberg, G. (2013). *Postural disorders and musculoskeletal dysfunction: Diagnosis, prevention and treatment*. Edinburgh: Churchill Livingstone/Elsevier. <https://doi.org/10.4172/2329-9096.S1.007>
- Tam, A. (2009). *Correct posture for correct living (3rd ed.)*. Lahav.
- WHO (World Health Organization), (2020). *Guidelines on physical activity and sedentary behavior*. <https://bjsm.bmj.com/content/54/24/1451>
- Winner, A. (2018). *A review of Arab education in Israel*. Knesset Research and Information Center.
- Zavdy, O. (2013). *The effects of a maximal exercise test on neurocognitive functions in children*. Hebrew University of Jerusalem and Hadassah Medical Center.

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the [Creative Commons Attribution license](#) which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.