

VALIDITY AND RELIABILITY QUESTIONNAIRE FOR SOCIAL, ENVIRONMENT AND SELF-EFFICACY RELATED OF DEAF ADOLESCENTS PHYSICAL ACTIVITY

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ABSTRACT

Adolescents with hearing impairments have decreased motor skills and motor ability in comparison with normal hearing Adolescents that may lead to less Physical Activity (PA). Hearing impairments might have lower levels of self-efficacy for health behaviors compared to other groups. These issues may prevent them from building a strong social network outside of their own family, which the developing feeling of self-efficacy is particularly complicated for hearing impairments adolescents. This study aimed to determine the validity and reliability of the questionnaire related for physical activity factors. Thirty-six participants from Iraqi schools for deaf adolescent girls participated in this study. To verify that the questionnaire was reliable and without errors, two verification steps were implemented. First, a validation phase was conducted by using experts in related fields to check the questionnaire. All their recommendations were comments obtained was followed before the second step. Secondly, a pilot study was performed to examine the reliability of the instrument. The collected data was analyzed using the Cronbach's alpha Coefficient reliability test found in the SPSS 21 software package. The results showed that all factors were reliable as they obtained a value of 0.7 or above.

Keywords: *Physical Activity, Social, Environment, Self-efficacy, Investigating, Hearing Impairments, and Deaf Adolescents.*

1. INTRODUCTION

Being physically active during adolescence is important for physical, social, and emotional wellbeing and the development of healthy behaviors that persist into adulthood. Physical activity is related with a variety of beneficial health outcomes in children and adolescents, such as reduced cardiovascular illness, being overweight, type 2 diabetes, and increased psychological and mental health and fitness [1], [2]. Despite the known benefits of physical activity, only 24.8% of adolescents (ages 12 to 19) meet the current recommendations of 60 minutes or more of daily moderate to vigorous physical activity (MVPA). In addition, there is evidence that physical activity declines as adolescent age. Being physically active throughout adolescence is important, given that sedentary adolescent are much more likely to continue to be sedentary and are at greater risk of becoming overweight; thus, it is essential to continue examining the multiple effects of adolescent physical activity [3], [4].

To guide the improvement of interventions and policies aimed at increasing physical activity during adolescence, it is important to identify factors related to physical activity. Several studies have examined the correlates or determinants of adolescent physical activity, especially psychological and neighborhood environmental factors. The outcomes of these studies document that psychological variables such as physical activity self-efficacy, and barriers to physical activity were significantly correlated with adolescent physical activity [3]. For instance, Lubans et al. [5], used structural equation modeling (SEM) to determine the association between Social Cognitive Theory (SCT) constructs and self-reported physical activity in 1518 adolescent girls, noticing that self-efficacy was most strongly associated with physical activity. Another factor that might be connected with physical activity in adolescents is perceived social support for physical activity. Studies have examined both friend and family support for physical activity, and the results have shown that there is a positive relationship [4], [5].

Social impact is also one of the factors related with the practice of physical activity in adolescents and is characterized by the effect of parents, friends, teachers, and relatives, as well as other groups, on physical activity [3]. This influence may occur either directly through social supports, or indirectly through behavior modeling. Thus, deaf adolescents with physically active parents or friends are more likely to be more active. Additionally, parental or friend activity can indirectly influence the physical activity of deaf adolescents through social support. There is evidence that more physically active parents and friends offer more social support and that social support is efficiently associated with physically active adolescents. Parents and friends may influence the adolescents' participation in physical activity by providing various types of social support though encouraging, stimulating, exercising together, or by providing transportation for the adolescents to the practice sites [6].

Neighborhood safety and proper places for walking and cycling has been recognized as effective ways to engage adolescents in physical activity. Consequently, more attention is being placed on understanding the environment and policies that support parks and other places to engage in physical activity as these important resources may influence levels of physical activity in adolescents [3], [4]. In addition, a growing body of research has examined the association between easy access to parks and park characteristics with overall physical activity. Environmental variables play an important role in modulating the level of physical activity [7]. However, relatively few studies have examined the effect of neighborhood safety, equipment access, and places for walking and cycling, on the physical activity of deaf adolescents.

Personal factors are also associated with adolescent physical activity. Important personal factors that are associated with physical activity are self-efficacy, perceived benefits of physical activity and perceived barriers to physical activity. Self-efficacy has been identified as one of the most important factors supporting the physical activity of deaf adolescents. A higher feeling of self-efficacy, or the belief in one's ability to be physically active, is related to being more physically active for adolescents. An adolescent's perception of the benefits of physical activity (e.g. the benefit of being healthy and having a good body

image) is positively associated with physical activity [1], [8].

In the deaf community, physical activity is one area that lacks research and tools for assessment. The risks of physical activity are complicated by communication barriers [9], limited health literacy, and misinterpreted health information that is learned through social relationships. S. Bari et al. [10], stated that deaf children aged 6 to 11 years have lower levels of physical activity than their hearing peers. Also, L. Alirezaimosaabadi et al. [9], argued that adolescents with hearing impairment tend to adopt unhealthy and sedentary lifestyles, do not participate in physical activity, and thus have increased risks for lifestyle-related non-communicable diseases in adulthood. To address those issues, it is important to address physical activity participation and the psychosocial correlates of this behavior in deaf people as it can improve the socialization and social inclusion in this population. This is an important issue because deaf adolescents display problems related to psychosocial adjustment and social inclusion compared with nondisabled populations or individuals with other disabilities. In addition, addressing the key factors could also help to overcome these issues [11], [12]. In particular, deaf adolescents not only who cannot hear, but also who they display reduced vocabularies; thus, their oral communication skills are impoverished [9].

Based on the above, physical activity is important for adolescents with hearing impairments, in which can improve the health and reduce the risk of several diseases. Therefore, this study focused on these issues by determining the validity and reliability of the questionnaire for related factors to encourage parents and schools to increase the physical activity available to adolescent girls and to help adolescent girls feel that they could be more physically active.

1.1. Background

Adolescent's physical inactivity have become one of the most serious public health concerns in developed and developing countries [13]. The prevalence of sedentary behavior among adolescents is increasing, in spite of sustained efforts by researchers, practitioners and policy makers. The less active which has been observed worldwide affects young people's

physical and psychological health [14].

International data from 105 countries, including developing and developed areas, argued that 80% of adolescents aged 11-15 years do not meet the current World Health Organization (WHO) PA guidelines of 60 min/day of MVPA [14]. PA declines and sedentary behavior increases during adolescence, and both trends are more pronounced in adolescent girls. Especially adolescents girls have lower PA than boys [15].

Study reported that, hearing impairments adolescents have lower participation in physical activities (PAs) and limited participation in team sports which are negatively affect their social development, self-efficacy [16]–[18].

Many of researches have been focusing on the student self-efficacy of the hearing impairment, which is this disability lead to many issues to be inactive like limited communication, low efficacy, and low participation [19]–[21]. According to Lu, Aitao, et al.[19], studied on evaluation the life satisfaction for the hearing impairments is a subjective of the overall quality of life for 118 Chinese deaf adolescents for both male and female. And they found that the six variables family, friendship, school, study, environment, and freedom have significant correlated with self-efficacy and life satisfaction, where these results mean that the social support and the environment support are important in the hearing impairments life.

Study reported that, students with hearing impairments were often seen as over-protected by their parents and lacked confidence as a result of limited experiences. In respect of, deaf adolescents have lower experience with the physical environment [15]. Generally, individuals in more disadvantaged neighborhoods have lower levels of PA, even when controlling for individual-level socioeconomic status. These relationships may be due to safety concerns (crime, victimization, poorly lighted streets); the physical environment (incivilities, access to parks/playgrounds, sidewalks, walkable destinations); or to differences in neighborhood social environment (perceived safety, social cohesion, social capital, social support, perceived collective efficacy) [22]

Inactivity trends in the last three decades have continued to increase among the adolescent's population, which is placing the population at risk for associated morbidity. The declining numbers of PA, the proportion of adolescents being inactive is rapidly increasing world-wide [14]. Global data indicate that 19% of 11-year-old, and only 10% of 15-year-old girls are achieving the recommended 60 min of moderate to vigorous physical activity each day [1]. Objective assessment of PA has demonstrated a 4% decline/year in moderate to vigorous physical activity in girls 11 and 15 years of age [23]. It appears that adolescence presents a period in which a large percentage of girls choose to undertake (even) less PA.

M. Ellis [24], reported that the influence of parental and school support have been documented as an important role for the hearing impairments which is these two factors can involve appropriate physical activity involvement and maintenance of health-related physical fitness levels. These support could be effect there self-efficacy to participate in appropriate physical activity level as reported by S. Ghosh [8]. Additional, according Baloun, et al. [20], studied on self-efficacy of the disable and hearing impairments children in the physical activity and education in Czech. And they reported that the self-efficacy beliefs affect the physical activity performance and of selection tasks.

Based on the above, many of studies have been designed a questionnaire to measure the self-efficacy and physical activity. For instance, Y. Huang et al. [2], designed questionnaire to assess and examine the environmental and psychosocial associates with physical activity as well as screen-based behaviors among Chinese children in Hong Kong. J. J. Martin et al. [25], established the validity of the questionnaire to assess the children in the school physical activity environment. A. Telford et al.[26], developed a reliable and valid questionnaire to measure the type, frequency, and duration of children physical activity. M. K. Erbaş et al. [27], determined the validity and reliability of the Turkish questionnaire to examine students' levels of predisposition to physical education. All of these studies, designed questionnaire for normal children in the school, and they did not involve the self-efficacy and the proposed factors and adolescents as well.

Therefore, many of studies they focusing on implement suitable programs to measuring and promoting self-efficacy [28] as well as physical activity for people who are hearing impairments, which is need valid instruments for assessing self-efficacy and PA in this population [10], [20], [21], [29]–[31].

2. THEORETICAL MODEL

This model was proposed based on the self-determination and social cognitive theories. This model in order to increase self-efficacy for the hearing impairments adolescents to be physically active. Based on self-determination theory the results found that the parental support, peer influence, parental role modeling have a significance effect on physical activity of self-efficacy [32], [33]. While the equipment access, neighborhood safety, access to services and place for walking and cycling based on social cognitive theory, have a significance effect of PA of self-efficacy [5], [34].

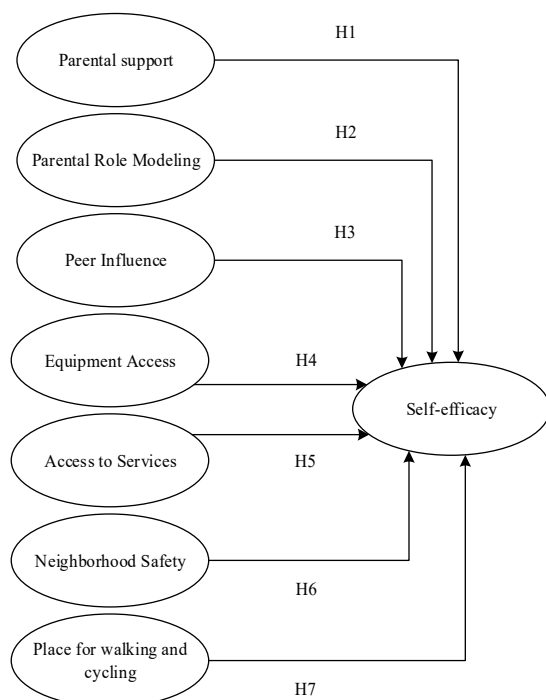


Figure 1. Research Methodology

The self-determination theory (SDT) which is used to support the parental, peer, and parental role modeling. These factors represent the social support for girls hearing impairments adolescents. According Deci and Ryan [35], reported based on the SDT that the role of motivation-related

variables for a relationship between perceived social support and intentions for PA may be derived. The motivation is affected by social factors and that the social factor/motivation relationship may be mediated by way of psychological needs. There is evidence to support social factors which are: parental support, peer influence, and parental role modeling. For instance, these social factors may be altered to lead to an increase of psychological need satisfaction and thus increasing PA participation [3], [6], [33].

The Social Cognitive Theory (SCT) has been developed by Albert Bandura [36] in 1986. In this theory suggested that learning within social contexts take place within dynamic and reciprocal social exchanges among individuals, environment and behavior. Since the individual perceives models as well as develop self-efficacy, the confidence to achieve a specific task also ensues. SCT is behavior theory that have been used to the physical activity sector and confirm that physical activity can be predicted by self-efficacy and environmental support [5]. The environmental support factors in term equipment access, neighborhood safety, access to services and place for walking and cycling have an effect to self-efficacy in which the suitable environment could motivate the girls to participate with physical activity with other people/children. Figure 1 illustrated the proposed model.

Therefore, this model has been proposed to study the social and environmental factors based on the SCT and SDT in order to support the self-efficacy of physical activity among hearing impairments adolescent girls. Which is the self-efficacy proposed as the higher significant prerequisite to change the behavior based on the SCT [15], [37]. And the self-efficacy is considered in widely studies correlated with people physical activity [15], [20], [34], [38]–[41].

3. RESEARCH METHOD

A survey research design in this study was used to investigate the key factors related to adolescent physical activity in Iraqi schools. One reason for selecting a survey was because surveys are a great way to begin reports and is an appropriate technique for examining factors and hypotheses. A questionnaire was used for data collection to be able to figure out the views of the adolescents and

their schools and to validate the variables of this study.

The cause for choosing questionnaire to make easier analysis data in much more scientifically and objectively compared to other types of research. Moreover, questionnaires assist the researcher to evaluate and compare other studies and it can be utilized to determine the beliefs of the responses and their support of existing hypothesis [42]. The methodology used in this study is described in the next section. Figure illustrated the methodology used in this study.

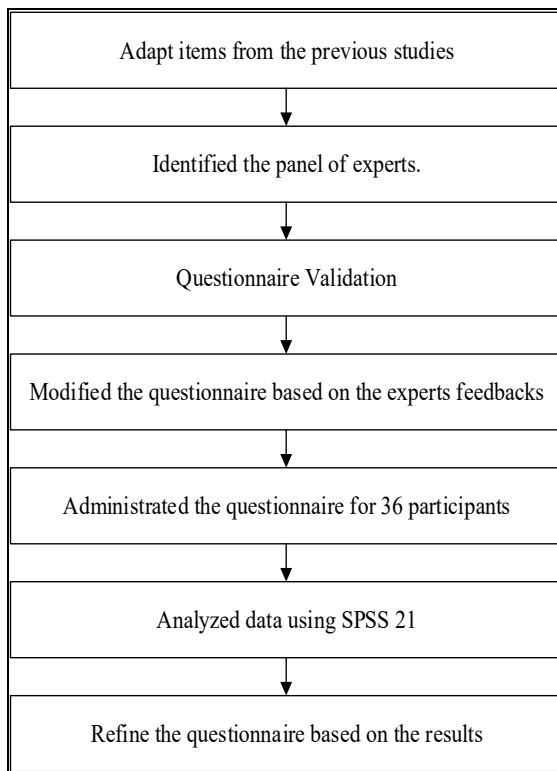


Figure 2. Methodology

4. QUESTIONNAIRE DESIGN

The instrument was designed using closed-ended questions, which made the respondents provide answers for each question easily and accurately. All the questionnaire items were adapted from prior studies related to each factor. Furthermore, the suggestions and recommendations from supervisors were taken into consideration in order to improve the design of the questionnaire. The questionnaire written first in English and then translated into Kurdish, and

Arabic which is the native language of the Iraqi people. All copies were approved to certify the translations versions after final validation. Table 1 shows the operationalization of the factors and items.

The questionnaire had four sections. Section 1 included the questions related to demographic information for the respondents. Section 2 related to social characteristics. Section 3 related to environmental characteristics. Section 4 related to self-efficacy. Please refer to *Appendix A*.

Table 1. Operationalization of the factors and items

Factor	Items	References
Parental support	9	[43]
Parental Role modeling	6	[43]
Peer influence	4	[43]
Equipment Access	3	[43]
Neighborhood safety	5	[43]–[47]
Place for walking and cycling.	6	[47], [48]
Access to Services.	6	[47], [48]
Self-efficacy	8	[49], [50]

5. QUESTIONNAIRE VALIDATION

The questionnaire was validated using a two-step process before it was distributed to the female adolescents participating in the study, to make sure all items were free of errors and easy to understand. The first step was to send the questionnaire to the experts including experts who worked in universities in related fields as instructors. Of the four experts, two worked in Malaysian universities and the other two experts were employed by universities in Iraq. In the second step, two teachers from Iraq and Malaysia schools were selected to validate the questionnaire. The questionnaire was evaluated in terms of its language, quality, and clearness and to check for any contradictions or duplications. The suggestions and feedback of the experts were implemented before the questionnaire was distributed. These two-steps was proceed in order to test the **content validity** and **face validity** [51]. According to Oates (2006) suggested to send the initial set of questionnaire for list experts in the sample field to validate the content of questionnaire design[52]. And for face validity test send for individual “non-experts” to test the usability of questionnaire as suggested by Kumar (2013) [53]. The list of experts can be found in

Appendix B. Experts list

Exp	Ed	Field	Current	Y.
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Expert name	Level	Specialization	Position	Experience (years)
Expert A	Dr.	Sport psychology	Senior lecturer, Malaysia	20 years
Expert B	Dr.	Sport & Recreation, Health Education & Human Movement Science	Senior lecturer, Malaysia	10 years
Expert C	Dr.	Sport psychology	Senior lecturer, Cihan University, Iraq	20 years
Expert D	Prof. Dr.	Sport psychology	Senior lecturer, Baghdad University, Iraq	40 years
Expert E	Dr.	Special education hearing Impairments	Senior teacher, Iraq	10 years
Expert F	Bachelor's	Special education hearing Impairments	Senior teacher, Iraq	25 years

6. PILOT STUDY

Several researchers test and refine their questionnaires using a pilot study before implementing it in a formal study that is considerably more recommended from several researchers [54], [55]. The major reason to use pilot study to be able to reveal any weak points in the questionnaire [56]. According to Creswell [57], stated that all studies have collect data by interviews or questionnaires need to consider a pilot study to make modifications to the instruments based upon the feedback from a small pool of respondents, so that the researchers can evaluate the instrument as well as ensure that all the questions were tested and verified and that the instructions were clear. This procedure permits the researchers to delete or modify any items that need to be changed.

The aim of this pilot study was to make sure that the design selected for this study was acceptable before moving forward to the final study. Thus, the questionnaire was administrated to female adolescents in Iraqi schools. The questionnaire was a paper-based survey, which was easy for the adolescents to complete during school. Thirty-six female adolescents completed the questionnaire. The number of respondents in this study was considered suitable for a pilot study, as according to Johanson and Brooks [58], were they claimed that only 30 representative individuals from the population of interest are needed for a pilot study where the purpose is to conduct a preliminary survey or scale development. The demographic background of the participants is shown in Table 2:

Table 2. Demographic background

Variable	No. of Participations	% of Participations
Gender		
Female	36	100
Age (years)		
12	12	33.3
13	7	19.4
14	17	47.2
family Income		
Under 300\$	6	16.7
400\$ - 700\$	15	41.7
Above 800\$	15	41.7
Mother's Education Level		
Less than high school graduate	11	30.6
High school graduate	13	36.1
Diploma	1	2.8
Bachelor's Degree	8	22.2
Higher Education	3	8.3
Father's Education Level		
Less than high school graduate	4	11.1
High school graduate	2	5.6
Diploma	6	16.7
Bachelor's Degree	22	61.1
Higher Education	2	5.6

Based on the demographic information above, we found that the family income for most of the hearing impairments girls adolescents between the

medium and above while just only 6 of them have lower family income., which is mean that they do not have economic risk or financial problem. Due to the financial risk could a located the children and adolescent in the lower self-efficacy or affected them in the social support and life satisfaction. The level of family income percentage shown in *Appendix C*.

Furthermore, the parents' education level have shown that the father education level higher than the mother education level for the 22 of the participants. Which is may the mother education level for female adolescent have higher significance than the father education. This due to the female hearing impairments adolescents spend most of their time with their mother especially in Iraq sociality. This also supported by Y. Shen [59], that reported the mother offering extra time and more support, and use further reasoning to communicate with their children and adolescents. The percentage of the parents' education level shown in *Appendix D*.

7. RESULTS

There are various kinds of reliability tests. The one mostly used to measure the reliability of a pilot study questionnaire is Cronbach's alpha [60], [61]. According to George and Mallery [62], test values for Cronbach's alpha are within the range of 0 to 1 and higher levels indicate greater reliability. Values of 0.9 and above are excellent, 0.8 and above are good, 0.7 and above are acceptable, 0.6 and above are questionable, and less than 0.6 are weak.

The data collected through the pilot study was analyzed using SPSS 21 to identify the values of all the factors within Cronbach's alpha. The result of the pilot study revealed that no changes were required to any of the items in the pilot study. As shown in Table 3, the Cronbach's alpha for the variables in the pilot test were all above 0.70. Therefore, all the factors were acceptable. Table 3 shows Cronbach's alpha as well as number of items for each factor.

Table 3. Factor Reliability

Factor	Cronbach's Alpha	No. of items
Parental Support	0.764	10
Parental Role	0.864	5

Modeling		
Peer Influence	0.851	4
Equipment Access	0.822	3
Neighborhood Safety	0.861	5
Place for Walking and Cycling	0.876	6
Access to Services	0.712	5
Self-efficacy	0.755	8

8. DISCUSSION

This study aimed to provide a reliable and valid questionnaire in order to gather the related data to help the children and adolescents girls to improve their physical activity. This study was motivated by a genuine reason to examine the impact of self-efficacy on the physical activity of adolescents' girls through addressing the needs, difficulties, and problems that face the physical activity of adolescents in Iraqi schools. A paper-based survey was used to achieve the research objective. A questionnaire was designed according to previous studies that investigated the same factors. The validity and reliability have been performed in each of subscale and factor. This in order to confirm the consistency of the research instruments. These values of the instrument reliability showing that the instrument is appropriate to measure the relationships of the social and environmental factors on self-efficacy of physical activity among female adolescents with hearing impairments. This kind of instrument has been rarely to study in the literature among female hearing impairments adolescents, which no study found measuring these factors and relationship in Middle East. This study stated that this questionnaire is valid and reliable, to assessing the physical activity factors include parental support, peers influence, parental role modeling, equipment to access, access to services, neighborhood safety, and place of walking and cycling. In this vein, this study stated on the literature by provides this questionnaire that can be used in other research to gather the related data of children and adolescents to improve their physical activity and reduce their health risk.

Many of physical activity studies have been provided valid questionnaires, but these questionnaires were designed for normal people and they did not include hearing impairments/deaf children and adolescents [2], [25]–[27]. In this manner, these studied did not focus on the same factors that have been identified in this study, which is mean that this study provided a new questionnaire for children and adolescents hearing

impairments.

This study can assist future research into this issue. The pilot study was conducted using questionnaires that were disseminated to adolescent girls in Iraqi schools. The pilot study was carried out to examine the validity and reliability of the questionnaire. This kind of study was necessary to verify the questionnaire, which was found to be reliable and free of errors as the Cronbach's alpha test on the pilot study revealed that the factors had values greater than 0.7. A final research paper will use this questionnaire to demonstrate the results of the data from this survey. The validity and reliability tests results reveal that empirical study can be extended to be able to lead to final model validation. These questionnaires were design in order to measure the proposed model related for physical activity and relationships between these factors. These factors will be examined to see if they have an impact on the physical activity of deaf students.

The next stage will examine a larger population from Iraqi schools. Future research will then test the hypotheses and validate the final model. The results of the tests can be expected to lead to a better understanding and grasp of adolescent self-efficacy in their physical activity.

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- PRM1 My parents are in really good shape physically.
- PRM2 My parents like to exercise, play sports, or play physical games or activities.
- PRM3 My parents don't like to do much physical activity.
- PRM4 My parents prefer walk places, if possible.
- PRM5 My parents usually walk or bike a lot.

Peer influence

- PI1 My friends like to exercise, play sports, or play physical games or activities.
- PI2 My friends think it is important to exercise, play sports, or play physical games or activities
- PI3 My friends are popular with other kids when they exercise, play sports, or play physical games or activities.
- PI4 My friends say that their bodies feel bad when they exercise, play sports, or play physical games.

Environment Characteristics

Equipment Access

- EA1 At home, there are enough supplies and pieces of sports equipment (like balls, bicycles, skates) to use for physical activity.
- EA2 At school, there are playgrounds, gym spaces, and enough supplies (like balls, hula-hoops) to use for physical activity.
- EA3 There are playgrounds, parks, or gyms close to my home or that I can get easily.

Neighborhood safety

- NS1 It is safe to walk or jog alone in my neighborhood during the day.
- NS2 It is difficult to walk or jog in my neighborhood because of things like traffic, no sidewalks, dogs, or gangs.
- NS3 My neighborhood streets are well light at night.
- NS4 The park or playground closest to where I live is safe at night.
- NS5 When walking in my neighborhood there are a lot of exhaust fumes.

Place for walking and cycling

- PW1 There are pathways on most of the streets in my neighborhood.
- PW2 The pathways in my neighborhood are well maintained (paved, even and not a lot of cracks).
- PW3 There are pedestrian paths in or near

Appendix A. Questionnaire items

Social Characteristics

Parental support

- PS1 My parents let me play on community or school sports teams
- PS2 My parents buy me a lot of sports, physical games, or physical activity equipment.
- PS3 My parents tell me I am not good at physical games or sports.
- PS4 My parents encourage me to try hard at physical games or sports.
- PS5 My parents play games and sports with me.
- PS6 My parents do not help me much with sports.
- PS7 My parents are good at games and sports.
- PS8 My parents want me to play outside.
- PS9 My parents tell me not to watch too much TV.
- PS10 My parents remind me to do some physical activity

Parental Role modeling

- PW4 my neighborhood that are easy to get to
Pathways are separated from the road/traffic by parked cars.
- PW5 There is a grass/dirt strip that separates the streets from the pathways in my neighborhood
- PW6 It is safe to ride a bike in or near my neighborhood.

Access to Services

- AS1 Shops are within easy walking distance of my home.
- AS2 Parking is difficult in local shopping areas.
- AS3 There are many places to go within easy walking distance of my home.
- AS4 It is easy to walk to a bus stop from my home
- AS5 The streets in my neighborhood are hilly, making my neighborhood difficult to walk in.

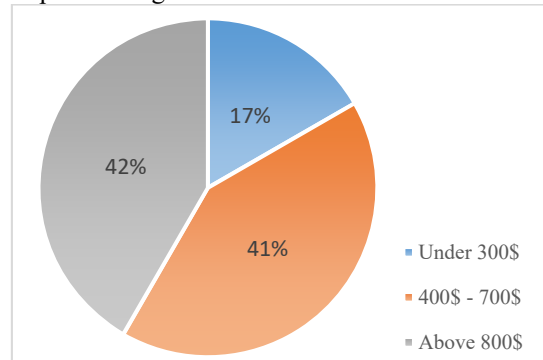
Self-Efficacy

- SEC1 I can be physically active on most days of the week.
- SEC2 I can ask my parent or other adult to do physically active things with me.
- SEC3 I can be physically active during my free time on most days even if I could watch TV or play (sedentary) video games instead.
- SEC4 I can be physically active on most days even if it is very hot or cold outside
- SEC5 I can ask my best friend to be physically active with me on most days.
- SEC6 I can be physically active even at home.
- SEC7 I think I have the skills I need to be physically active.
- SEC8 I can be physically active during my free time on most days no matter how busy my day is.

Appendix B. Experts list

Expert name	Edu. Level	Field	Current position	Y. of experience
Expert A	Dr.	Sport psychology	Senior lecturer, Malaysia	20 years
Expert B	Dr.	Sport & Recreation, Health Education & Human Movement Science	Senior lecturer, Malaysia	10 years
Expert C	Dr.	Sport psychology	Senior lecturer, Cihan University, Iraq	20 years
Expert D	Prof.	Sport psychology	Senior lecturer, Baghdad University, Iraq	40 years
Expert E	Dr.	Special education hearing Impairments	Senior teacher, Iraq	10 years
Expert F	Bachelor's	Special education hearing Impairments	Senior teacher, Iraq	25 years

Appendix C. Family Income for hearing impairments girls' adolescents



Appendix D. Parents education level

