

Appendix A

Dear Respondent:

I am a graduate student seeking my doctoral degree in the Department of Nutrition and Food Science at the University of Maryland, College Park. The study is being conducted with funding from the Ministry of Health in Saudi Arabia. The enclosed questionnaire has been approved by the IRB (539976-1) on January 14, 2014.

Obesity is a complex, multifactorial condition in which excess body fat may put a person at health risk. The Saudi National health survey indicated that the prevalence of obesity in Saudi Arabia was significantly more in women than in men. The purpose of the enclosed survey is to determine the prevalence of obesity and to identify the most common risk factors that are associated with obesity among Saudi women of reproductive age who are attending Jeddah Primary Health Care (JPHCC). Moreover, it helps identify perceived barriers to weight maintenance among them.

I'm inviting you to participate in this research project because you will be a valued participant in helping to find solution for the problem of increasing prevalence rates of obesity and its complications among Saudi women. With your participation, this study will provide information to reverse these trends that requires changes in individual behavior and the elimination of societal barriers to healthy lifestyle choices.

Be assured that this study will cause you no harm and it will take 30 to 35 minutes to complete. After you have read and signed this consent and agreed to participate, I will ask you some questions in an empty room on how you manage your weight, your knowledge and attitude about eating habits and physical activity and lifestyle. If you give me permission, I will also need to take some physical measurements such as, weight, height, and waist circumference (WC). A trained nurse will take these measurements.

If you choose to participate, all your responses will be kept confidential and your name will not be identified on the questionnaire. Your information will be protected to the maximum extent possible. The information will not be seen by anyone else except me and my professor in the United States.

Your participation in this research is completely voluntary. You may choose not to take part at all. If you do decide to participate in this research, you can stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized and this will not influence your benefits and services provided by the clinic.

Thank you for taking the time to assist me in this research.

Sincerely,

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Department of Nutrition and Food Science

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Date: / /	Health sector name:	
File number:	PHC name:	Application No:

Section 1: Socio-demographic

- 1.1 Ageyears
- 1.2 How many years of academic education have you completed?
.....years
- 1.3 What is your current occupation?
(1) housewife (2) student (3) employee (4) Other ----- (specify)
- 1.4 What is your marital status?
(1) never married (2) married (3) separate (4) divorced (5) widowed
- 1.5 Average monthly household income:
(1) less than 8000 SR (2) 8,000 to SR-17.999 SR (3) 18.000 SR and more (4) Unknown
- 1.6 Do you have a maid (household help)? yes no
- 1.7 How many servants do you have at home? (a)----- servants (b) none
- 1.8 Do you: (1) own home (2) rent home (3) Installment (4) government
- 1.9 How many persons do you live with? -----Person (s)
- 1.10 How many rooms in your house? -----Room(s)

Check items in section (2) if you are married or you had married before
OTHERWISE (never married and not have been pregnant or abortion, and not have children), go to section (3)

Section 2: Obstetric history

- 2.1 How many times had you been pregnant (regardless of whether the pregnancies were interrupted (by abortion, or fetal death) or resulted in a live birth.)? times
- 2.2 How many parity do you have? (Parity refers to the number of pregnancies of 24 weeks (6months) gestation or more).
..... times
- 2.3 How many children do you have? children
- 2.4 How many children had you been breastfed? children none
- 2.5 How long did an average of breastfeed your children? months never

Section 3: Medical and Family History of Chronic Diseases

- 3.1 Do you have any of the following health conditions (you can select more than one):
(1). Obesity (2) diabetes (3) hypertension (4) cardiovascular diseases (5) high cholesterol level
(6) high triglyceride level (7) none
- 3.2 Does anyone in your family (blood relatives) have any of the following health conditions (you can select more than one):
(1). Obesity (2) diabetes (3) hypertension (4) cardiovascular diseases (5) high cholesterol level
(6) high triglyceride level (7) none

Section 4: Eating habits

- 4.1 How many regular main meals (breakfast, lunch, and dinner) do you eat daily?
(1) one (2) two (3) three (4) none

4.2 Do you eat breakfast?

- (1) always (2) often (3) sometimes (4)never

If you do not eat breakfast, please go to item number (4.5)

4.3 Which beverage do you consume at breakfast?

- (1) milk/coffee with milk/tea with milk/buttermilk
 (2) fresh fruit juice
 (3) canned fruit juice or tetra pack fruit juice/cappuccino/hot chocolate
 (4) black tea/black coffee
 (5) nothing/water
 (6) soft drink

4.4 At breakfast, do you eat?

- (1) breakfast cereals/oatmeal
 (2) fruit/ fruit salad/ veg salad/yogurt
 (3) mortadella /liver /turkey with bread
 (4) cheese/egg/tuna/hommus/foul with bread
 (5) pizza/ croissant /fatayer/biscuits/ daunt / cakes/masoub
 (6) indomie

4.5 Do you eat at least 2 portions (200gm) of fruit every day? (One portion of fruits equal to one piece of fruit (size of a tennis ball), 1/2 cut-up fruit, raw, cooked, frozen, or canned , or one-quarter cup dried fruit, or three quarters cup 100 % fruit juice).

- (1) always (2) often (3) sometimes (4)never

4.6 Do you eat at least 2 portions (200gm) of vegetables every day (1/2 cut up vegetables, raw, cooked, frozen, or canned, ½ cup cooked, canned or frozen legumes, one-cup leafy greens, or three quarters cup 100 % vegetable juice)?

- (1) always (2) often (3) sometimes (4)never

4.7 Do you usually eat whole grain bread? (A whole grain contains all edible parts of the grain, including the bran, germ, & endosperm).

- (1) always (2) often (3) sometimes (4)never

4.8 Do you usually eat a cake or a dessert right after meals?

- (1) always (2) often (3) sometimes (4)never

Fats in food are always a mix of different types of fatty acids – when we say “saturated fat”, we really mean the saturated fatty acids in the particular fat source. Typically, we get the greatest proportion of our saturated fat intake from cooking fats like lard, butter, margarine, palm and coconut oil.

4.9 Do you usually use these types of fat when you cook your meals?

- (1) always (2) often (3) sometimes (4)never

4.10 Do you eat snacks?

- (1) always (2) often (3) sometimes (4)never

If you do not eat snacks, please go to item number (4.12)

4.11 If you eat snacks, your snacks are based mainly on:

- (1) fruit/yogurt/butter milk/vegetable salad
 (2) biscuits/fatayer/popcorn/ nuts/sandwich
 (3) fried potatoes/donuts /chips/pizza
 (4) sweets/chocolate/ice cream/cakes

4.12 Which beverages do you usually drink between meals?

- (1) soft drinks (Cola, 7 UP, Fanta, beer, iced tea, tonic water, “sport drink”, etc.)/fruit and milk shakes
 (2) tea/coffee/ Nescafe
 (3) fruit juice
 (4) nothing
 (5) green tea/ herbal drinks

4.13 Do you usually consume at least 1 cup of milk products every day such as milk, yogurt, buttermilk, or cheese?

- (1) always (2) often (3) sometimes (4)never

4.14 Do you drink at least 8 cups of water every day?

- (1) always (2) often (3) sometimes (4)never

4.15 Do you usually eat late at night (after 8 pm)?

- (1) always (2) often (3) sometimes (4)never

- 4.16 Do you usually eat while watching the TV?
 (1) always (2) often (3) sometimes (4) never
- 4.17 Do you usually add sugar to drink?
 (1) always (2) often (3) sometimes (4) never
- 4.18 Do you usually add table salt to your foods (after cooking)?
 (1) always (2) often (3) sometimes (4) never
- 4.19 Do you eat fast food?
 (1) always (2) often (3) sometimes (4) never
- 4.20 How many times usually eat fast food per week?
 (1) one time (2) two times (3) three times (4) more than 3 times (5) none
- 4.21 Do you usually eat (you can choose more than one)?
 (1) in response to hunger
 (2) in response to negative emotions (such as stress, depression, anxiety, sadness, boredom, anger, loneliness, frustration, confusion, loss, resentment, relationship problems, and poor self-esteem)
 (3) in response to positive emotions (such as happiness & contentment)
 (4) in response to other reasons
- 4.22 Do you usually eat?
 (1) alone (2) with family (3) with friends or colleges
- 4.23 who do usually cook at you home? (you can choose more than one)?
 (1) myself (2) my mother (4) my sister (5) my aunt (6) my grandmother or grandfather
 (7) housemaid (8) none (9) other ----- (specify)
- 4.24 what kind of foods usually do you eat (you can choose more than one)?
 (1) Traditional foods (e.g., Kabsa, Qursan, Jarish, or Saliq)
 (2) Local fast foods (e.g., falafel, Shawarma, Motabag, or Masoob)
 (3) Mediterranean foods (e.g., Lebanese, Egyptian, Turkish, or Iranian foods)
 (4) North Africa foods (e.g., Moroccan, Tunisian, or Algerian foods)
 (5) Asian foods (e.g., Indian, Chinese, Thai, or Japanese foods)
 (6) African foods (e.g., Sudanese, or Ethiopian foods)
 (7) Western foods (e.g., Italian, French, or Mexican foods)
 (8) American fast foods (e.g., McDonalds, Burger King, or Kentucky Fried chicken)

Section (5): Physical activity and lifestyle

(Physical activity is any body movement that works your muscles and requires more energy than resting (that increase energy expenditure above a basal level such as, walking, running, dancing, swimming, yoga, and gardening, walking up the stairs).

a. Physical activity

5.1a. During the last 7 days, on how many days did you do vigorous physical activities like heavy lifting, aerobics, using a stair climber machine at a fast pace, or fast bicycling?

Think about only those physical activities that you did for at least 10 minutes at a time.

_____ days per week or No vigorous physical activities (Skip to question 5.2a)

5.1b. How much time in total did you usually spend on one of those days doing vigorous physical activities?

_____ hours _____ minutes Don't know/Not sure

5.2a. Again, think only about those physical activities that you did for at least 10 minutes at a time. During the last 7 days, on how many days did you do moderate physical activities like carrying light loads, using a stair climber machine at a light-to- moderate pace, bicycling at a regular pace, or doubles tennis? Do not include walking.

_____ days per week or No moderate physical activities (Skip to question 5.3a)

5.2b. How much time in total did you usually spend on one of those days doing moderate physical activities?

_____ hours _____ minutes Don't know/Not sure

5.3a. During the last 7 days, on how many days did you walk for at least 10 minutes at a time? This includes walking at work and at home, walking to travel from place to place, and any other walking that you did solely for recreation, sport, exercise or leisure.

_____ days per week or No walking (Skip to question 5.4)

5.3b. How much time in total did you usually spend walking on one of those days?

_____ hours _____ minutes Don't know/Not sure

The last question is about the time you spent sitting on weekdays while at work, at home, while doing course work and during leisure time. This includes time spent sitting at a desk, visiting friends, reading traveling on a bus or sitting or lying down to watch television.

5.4. During the last 7 days, how much time in total did you usually spend sitting on a week day?
 _____ hours _____ minutes Don't know/Not sure

b. Lifestyle:

5.5 What time of the year is reasonable for you to exercise outdoors? (you can choose more than one)

(1) Fall (2) Winter (3) Spring (4) Summer (5) Any time (7) none

5.6 Where do you usually do exercise (you can choose more than one)?

(1) home (2) gym (3) school (5) at work (6) in public (8) around inside malls
 (9) other----- (specify) (10) nowhere

5.7 What are the main reasons for doing regular physical activities or sports,? (you can select more than one)

(1) health (2) social (3) competition (4) to lose weight (5) recreation

(6) other----- (specify) (7) none

5.8 What do you prefer to do during leisure time?

(1) walking (2) practicing a sport (3) shopping (4) dancing

(5) watching TV/listening to music /using the computer or phone/ reading a book

(6)

other----- (specify)

5.9 Do you usually take an afternoon siesta (nap) soon after a meal?

(1) always (2) often (3) sometimes (4) never

5.10 How many hours per night do you usually sleep (on average)?

.....hours/night

5.11 Do you usually use a car?

(1) always (2) often (3) sometimes (4) never

5.12 Does TV media influence your body image?

(1) always (2) often (3) sometimes (4) never

5.13 Do you wish to look like celebrity stars?

(1) always (2) often (3) sometimes (4) never

5.14 Do you have exercise equipment at home (e.g., treadmills, or exercise bikes)? (1) yes (2) no

5.15 If yes, do you usually use them (90 min or more/week)?

(1) one time/week (2) two-times/week (3) more than two times/week (4) never

Notes:

Section 4. Eating habits:

- The 7 items of the positive response are (4.2, 4.5-7, 4.10,4.13,4.14).
- The 7 items of the negative response are (4.8, 4.9, 4.15-19).
- Non-scored items (10 items) are (4.1, 4.3, 4.4, 4.11, 4.12, 4.20-23)

Appendix B

How important are the following as barriers to maintaining a healthy body weight? Section (1): Perceived barriers to adopting healthy eating habits Please read each statement and indicate how likely you are to say each of the following statements:				
I. Personal barriers to healthy eating	3 = very likely	2 = somewhat likely	1 = somewhat unlikely	0 = very unlikely
Lack of willpower				
1. I do not have the motivation to eat a healthy diet.				
2. I'll be criticized or made fun of if I eat health food.				
3. I feel like diet planning would be too hard for my family.				
4. I afraid I will get hungry if I follow a diet plan.				
5. I'll never be able to change how I eat.				
6. I really crave sweets and high-fat foods.				
7. I stop following a diet when I do not lose weight.				
Lack of knowledge				
8. I don't know how to make my diet healthier.				
9. From my knowledge, following a diet plan would not help me lose weight.				
10. I have not been counseled about importance of healthy eating (by a doctor or dietitian).				
11. I do not learn in a school what a healthy food is.				
Lack of skill				
12. I do not have the skills to plan, shop for, prepare or cook healthy foods.				
Lack of enjoyment				
13. I do not enjoy eating healthy foods (low salt, sugar, and fat).				
14. I enjoy eating Saudi traditional food (such as Kabsa "rice with meat").				
15. The taste, color and appearance of foods are very important for me.				
16. I think following a meal plan would take the pleasure out of eating.				
17. I do not like artificial sweeteners (such as Splenda, Equal, or Sweet'n Low).				
18. I do not like low fat products (such as low-fat milk, laban, yogurt, cheese, or cake).				
19. I do not like to drink (tea, coffee, or juice) without sugar.				
II. Social environmental barriers to healthy eating				
Lack of time				
20. Healthy meals take too long to prepare.				
21. I don't have enough downtime to think and plan for our meals.				
22. I have no time to prepare or eat healthy foods because of (job, study).				
23. I have no time to prepare or eat healthy foods because of (family commitments, social activity).				
24. I eat out sometimes when my family or I do not have time to cook.				
Social influence				
25. It can be hard to stick with a healthy eating plan when family and friends don't want to join me.				
26. I do not have family support to eat a healthy diet.				
27. My kids don't like everything I want to eat.				
28. It's kind of difficult for me to eat healthy foods because my family is not the healthiest eaters.				
29. I feel embarrassed to eat healthy foods when I am around my family.				
30. I feel pressured to eat during social gatherings because if I refuse, the host might be offended.				
31. Usually healthy food is not served at social activities.				
Lifestyle changes				
32. I usually meet my friends out (at a cafe or restaurant).				

33. When my family and friends have an event, they usually prefer to celebrate at a restaurant rather at home.				
34. We usually order food when we have a home party.				
35. We usually order food for dinner.				
36. Usually, the housemaid takes care of cooking our meals.				
II. Physical environmental barriers to healthy eating				
Lack of resources				
37. I am not able to buy healthy foods that are inexpensive.				
38. There's not much choice of foods when I eat out (work or school).				
39. The food shops around us don't offer much healthy choice foods.				
40. My cooking facilities are not very good (such as griller, or oven).				
41. The low-calorie food products (diet products) are too expensive (such as sweets, jam, cookies, or chocolate diet).				
42. What is the one thing that makes it hardest for you to eat a healthy diet?----- -----				
Section (2): Perceived barriers to engaging in regular physical activity				
I. Personal barriers to physical activity	3 = very likely	2 = somewhat likely	1 = somewhat unlikely	0 = very unlikely
1. Lack of willpower				
43. I do not have the motivation to do physical activity (exercise).				
44. Other recreational activities with my friends are more entertaining than exercise.				
45. I've been thinking about getting more exercise, but I just can't seem to get started.				
46. It is too easy for me to find excuses not to exercise.				
2. Lack of self-confidence				
47. I've been worried about my looks when I exercise.				
48. I feel embarrassed while doing physical activity.				
3. Lack of skill				
49. I don't get enough exercise because I have never learned the skills for any sport.				
50. I'm not good enough at any physical activity to make it fun.				
4. Lack of enjoyment				
51. I do not enjoy physical activity (exercise).				
52. I do not feel comfortable when I sweat during exercise.				
5. Lack of knowledge				
53. From my knowledge, physical activity has no positive effects on my health.				
54. I have no information about the importance of physical activity for health and maintaining a healthy body weight.				
55. I have not been counseled about importance of physical activity (by a doctor or dietitian).				
56. I do not know which physical activity is suitable for me.				
57. I do not know how much time I should exercise every day.				
Lack of energy				
58. I'm just too tired (after school, job, or household work) to do any exercise.				
59. I don't get enough sleep as it is. I just couldn't get up early or stay up late to get some exercise.				
60. I'm too tired during the week and I need the weekend to catch up on my rest.				
Fear of injury				
61. I'm afraid I might injure myself during exercise.				
62. I think exercise is physically painful.				
Health problems				

63. I have health problems (such as joint pain, stroke, and paralysis) that keep me from exercising.				
64. My leg pain is too bad for me to exercise.				
II. Social environmental barriers to physical activity	3 = very likely	2 = somewhat likely	1 = somewhat unlikely	0 = very unlikely
Lack of support				
65. None of my family members or friends likes to do anything active, so I don't have a chance to exercise.				
66. None of my family members or friends encourage me to exercise, so I don't have a chance to exercise.				
67. My parents give academic success priority over exercise.				
Lack of time				
68. My day is so busy I just don't think I can make the time to include physical activity in my regular schedule.				
69. I have no time for exercise because of my social and family commitments.				
Social influence				
70. My usual social activities with family or friends do not include physical activity.				
71. Frequent social gatherings and social obligations do not allow me to exercise.				
72. I have been thinking about exercise, but I have no one else to look after my children.				
Social norms				
73. My family (father, husband, or brother) does not allow me to walk outside (in public) alone.				
74. My family (father, husband, or brother) does not allow me to walk outside (in public) at all.				
75. My family (father, husband, or brother) does not allow me to join the gym.				
76. If I wanted to practice physical activity outside the home (such as in public or in the gym), I would need to ask permission first from my father or husband.				
77. If I wanted to buy exercise equipment (such as treadmill or cycling bike), I would need to ask permission first from my father or husband.				
78. Wearing the Abaya makes me feel uncomfortable to walk outside.				
79. Prohibition on driving affects my activity/mobility for getting to/from exercise places.				
II-Physical environmental barriers to physical activity	3 = very likely	2 = somewhat likely	1 = somewhat unlikely	0 = very unlikely
Lack of resources				
80. There is lack to access to physical activity facilities such as jogging trails, sidewalks, or swimming pools.				
81. If I had exercise facilities and showers at work, then I would be more likely to exercise.				
82. I do not have enough space to do indoor exercise in my house.				
83. It is just too expensive to have the right equipment to do exercise.				
84. It is just too expensive to join a gym to exercise.				
85. It is not safe to walk in my neighborhood.				
86. I think having a housemaid contributed to decreasing my physical activity level by her performing household activities, such as cleaning, instead of myself.				
Lack of transportation				
87. Usually, I have difficulty in transportation to go outside to do exercise.				
88. My family does not allow me to use transportation services (such as a taxi) to go outside to do exercise.				
89. My family does not allow my friend to pick me up to or from a gym.				

90. If I could drive, I would not have any problem to go outside to do exercise.				
Hot weather				
91. It's too hot to exercise outdoors.				
92. There is no walking track in a mall that I can walk on it in the summer time.				
93. What is the one thing that makes it hardest for you to be physical active?-----				

Appendix C

Appendix C: Ranking the important healthy eating barriers* items based on the responses of non-pregnant Saudi women (at reproduction age residing in Jeddah city, Saudi Arabia (n=408)					
Rank-overall	Rank-items	a. Personal barriers to healthy eating items (19 items)	Subgroups	V. Likely n(%)	SW.likely n(%)
1	1	I do not like artificial sweeteners (such as Splenda, Equal, or Sweet'n Low).	Lack of enjoyment	282(69.2)	37(8.1)
2	2	I enjoy eating traditional food (e.g. Kabsa "rice with meat").	Lack of enjoyment	258(63.3)	102(25.1)
4	3	The taste, color and appearance of foods are very important for me.	Lack of enjoyment	218(53.4)	123(30.1)
6	4	I have not been counseled about importance of healthy eating (by a doctor or dietitian).	Lack of knowledge	179(44)	44(10.7)
8	5	I do not like to drink (tea, coffee, or juice) without sugar.	Lack of enjoyment	172(42.2)	119(29.1)
9	6	I do not enjoy eating healthy foods (low salt, sugar, and fat).	Lack of enjoyment	152(37.2)	94(23)
14	7	I do not have the skills to plan, shop for, prepare or cook healthy foods.	Lack of skill	122(29.8)	113(27.7)
16	8	I really crave sweets and high-fat foods.	Lack of willpower	110(27.0)	104(25.4)
19	9	I don't know how to make my diet healthier.	Lack of knowledge	103(25.3)	108(26.4)
18	10	I think following a meal plan would take the pleasure out of eating.	Lack of enjoyment	107(26.1)	134(32.9)
		b. Social environmental barriers to healthy eating items (17 items)	Subgroups	V. Likely n(%)	S.W.likely n(%)
3	1	Usually healthy food is not served at social activities.	Social influence	230(56.5)	150(36.7)
7	2	It can be hard to stick with a healthy eating plan when family and friends don't want to join me.	Social influence	178(43.6)	94(23.1)
10	3	I eat out sometimes when my family or I do not have time to cook.	Lack of time	145(36.6)	150(36.7)
12	4	I feel pressured to eat during social gatherings because if I refuse, the host might be offended.	Social influence	140(34.3)	127(31.1)
13	5	My kids don't like everything I want to eat.	Social influence	133(32.4)	69(17.0)
17	6	We usually order food when we have a home party.	Lifestyle changes	107(26.3)	174(43.0)
20	7	It's kind of difficult for me to eat healthy foods because my family is not the healthiest eaters.	Social influence	102(25.1)	97(23.7)
21	8	I do not have family support to eat a healthy diet.	Social influence	97(23.7)	99(24.3)
22	9	I don't have enough downtime to think and plan for our meals.	Lack of time	89(21.9)	118(28.8)
23	10	I have no time to prepare or eat healthy foods because of (job, study).	Lack of time	76(18.5)	63(15.6)
		c. Physical environmental barriers to healthy eating items (5 items)	Subgroups	V. Likely n(%)	S.W.likely n(%)
5	1	There's not much choice of healthy foods when I eat out (work or school).	Lack of resources	200(48.9)	133(32.5)
11	2	The food shops around us don't offer much healthy choices of foods.	Lack of resources	145(35.6)	142(34.9)
15	3	The low-calorie food products (diet products) are too expensive (such as sweets, jam, cookies, or chocolate diet).	Lack of resources	120(29.3)	136(33.4)
24	4	I am not able to buy healthy foods that are inexpensive.	Lack of resources	54(13.1)	60(14.7)
List of Abbreviations: V. Likely: Very likely; SW.Likely: Somewhat Likely; *Barriers were rated on 4-point Likert scale that ranged from "very likely" (3) to "very unlikely" (0). Ranking the top 10 important barriers items "very likely" among barriers categories, then ranking of overall healthy eating barriers items (41 items)					

Appendix D

Appendix D: Ranking the important physical activity barriers^a items based on the responses of non-pregnant Saudi women (at reproduction age residing in Jeddah city, Saudi Arabia (n=408)					
Rank-overall	Rank-items	a. Personal barriers to healthy eating items (19 items)	Subgroups	V. Likely n(%)	SW.likely n(%)
11	1	I do not know how much time I should exercise every day.	Lack of knowledge	212(51.9)	63(15.4)
12	2	I do not know which physical activity is suitable for me.	Lack of knowledge	203(49.8)	71(17.4)
15	3	I have not been counseled about importance of physical activity (by a doctor or dietitian).	Lack of knowledge	173(42.5)	89(21.9)
16	4	It is too easy for me to find excuses not to exercise.	Lack of willpower	173(42.4)	168(41.2)
18	5	I've been thinking about getting more exercise, but I just can't seem to get started.	Lack of willpower	164(40.1)	133(32.5)
21	6	I'm just too tired (after school, job, or household work) to do any exercise.	Lack of energy	149(36.6)	133(32.6)
22	7	I'm too tired during the week and I need the weekend to catch up on my rest.	Lack of energy	141(34.7)	91(22.2)
25	8	Other recreational activities with my friends are more entertaining than exercise.	Lack of willpower	121(29.7)	134(32.9)
26	9	I'm not good enough at any physical activity to make it fun.	Lack of skill	111(27.1)	110(27.1)
30	10	I do not feel comfortable when I sweat during exercise.	Lack of enjoyment	50(12.3)	64(15.6)
		b. Social environmental barriers to physical activity items (15 items)	Subgroups	V. Likely n(%)	S.W.likely n(%)
2	1	If I wanted to practice physical activity outside the home (e.g. in public or in the gym), I would need to ask permission first from my father or husband.	Social norms	303(74.2)	47(11.6)
3	2	My family does not allow me to use public transportation services to go outside to do exercise.	Social norms	296(72.7)	25(60.0)
5	3	If I wanted to buy exercise equipment (e.g. treadmill), I would need to ask permission first from my father or husband.	Social norms	257(62.9)	51(12.5)
7	4	My family (father, husband, or brother) does not allow me to walk outside (in the public areas) alone.	Social norms	240(58.8)	32(8)
8	5	My usual social activities with family or friends do not include physical activity.	Social influence	236(57.8)	99(24.3)
17	6	My family does not allow my friend to pick me up to or from a gym.	Social norms	171(41.8)	55(13.4)
23	7	None of my family members or friends encourages me to exercise, so I don't have a chance to exercise.	Lack of support	131(32.2)	87(21.4)
24	8	None of my family members or friends likes to do anything active, so I don't have a chance to exercise.	Lack of support	129(31.7)	86(21.1)
28	9	My day is so busy I just don't think I can make the time to include physical activity in my regular schedule.	Lack of time	83(20.5)	156(38.2)
29	10	Prohibition on driving affects my activity/mobility for getting to/ from exercise places.	Social norms	76(18.7)	94(22.9)
		c. Physical environmental barriers to physical activity items (13 items)	Subgroups	V. Likely n(%)	S.W.likely n(%)
1	1	There is no walking track in a mall that I can walk on it in the summer time.	Hot weather	355(86.9)	46(11.3)
4	2	It's too hot to exercise outdoors.	Hot weather	273(66.8)	75(18.4)
6	3	It is not safe to walk in my neighborhood.	Lack of resources	248(60.2)	61(14.9)
9	4	There is lack to access to physical activity facilities such as jogging trails, sidewalks, or swimming pools.	Lack of resources	230(56.5)	116(28.4)
10	5	Usually, I have difficulty in transportation to go outside to do exercise.	Lack of transportation	220(54.0)	98(23.9)
13	6	If I had exercise facilities and showers at work, then I would be more likely to exercise.	Lack of resources	192(47.1)	55(13.3)

14	7	It is just too expensive to have the right equipment to do exercise.	Lack of resources	177(43.4)	140(34.2)
19	8	If I could drive, I would not have any problem to go outside to do exercise.	Lack of transportation	161(39.5)	75(18.2)
20	9	It is just too expensive to join a gym to exercise.	Lack of resources	154(37.9)	153(37.4)
27	10	I do not have enough space to do indoor exercise in my house.	Lack of resources	90(22)	90(22)
List of Abbreviations: V. Likely; Very Likely; SW.likely; ^a Barriers were rated on 4-point Likert scale that ranged from “very likely” (3) to “very unlikely” (0). Ranking the top 10 important barriers items “very likely” among barriers categories, and then for overall PA barriers items (50 items)					