Graduate Students, Population, Health & Wellness

The Association between Health Information Seeking and Behavior Change Related to Physical Activity among Qatari Adolescents

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BACKGROUND

Physical activity (PA) in teens has substantial benefits for their wellbeing and health which can extend to their adulthood life (1,2). However, an astounding majority of adolescents worldwide (3) and in Qatar (4) do not meet the minimum one hour of moderate-to-vigorous intensity PA daily recommended by the World Health Organization. Seeking information on health topics, such as PA, is increasingly documented among teens (5-8), and may provide an opportunity for PA promotion.

Keywords: adolescents; health information seeking; physical activity.

OBJECTIVES

This study aimed at:
- Exploring health information seeking behavior among Qatari adolescents and
- Assessing the influence of information obtained from different sources on PA behavior change.
- Identify possible correlates of PA behavior change among Qatari teens.

METHODOLOGY

- This is a secondary analysis of data from a nationally representative cross-sectional survey conducted in 2017 among 1050 Qatari students aged 13-19 years.
- Self-reported information on demographics, psychosocial factors, PA, and sources used to obtain health information were collected.
- Main outcome was the attempt to change PA behavior.
- Multiple imputation by chained equations (MICE) was performed to impute the missing values.
- Logistic regression analysis (purposeful selection method) accounting for survey design was carried out to examine the association between the outcome and information sources used to attempt PA change, and to find independent predictors for this attempt.
- The estimated average marginal effects (AME), also known as risk differences, were derived from the results of logistic regression model, to have a sense of the absolute effect size reflecting the difference in the probability of the outcome associated with a change in the explanatory variable, adjusting for all the other covariates.

RESULTS

- Teenagers in Qatar, specially girls, were not active enough.
- Nearly 68% of the respondents tried to change PA behavior (65% male versus 72% female), and 46% were physically active (55% males versus 38% females) (Table 1, Figure 1).
- About 89% of adolescents rated PA as an important topic for them personally (Table 1).
- Based on information from interpersonal, traditional, online, and social media sources about 65%, 55%, 51%, and 54% of adolescents respectively attempted to change their PA behavior (Table 1, Figure 2).
- Results from multivariable logistic regression showed that teens who used information from interpersonal and online sources to try to change their behavior had 9 times (OR=9.35, 95% CI: 4.15-21.08, P<0.001) and nearly 3 times (OR=2.53, 95% CI: 1.50-4.27, P=0.001) higher odds of change in PA, respectively (Table 2).
- The odds of attempt to change PA were 2 times higher among older adolescents (16-19 years) (OR=2.17, 95% CI: 1.37-3.44, P= 0.002) and among teens who considered PA as important to them (OR=2.34, 95% CI: 1.13-4.84, P=0.023) (Table 2).
- The estimated AMEs of using information from interpersonal sources and online sources on the probability of attempting PA change were about 46-percentage point and 16-percentage point increase respectively (Table 3, Figure 3).
- For older adolescents and those considering PA important, the AMEs on the attempt to change PA were 11 and 14-percentage points respectively. All were sizable and significant differences (P<0.05) (Table 3, Figure 3).

Table 1. Characteristics of the participants.

Characteristics	Unweighted N* 1050	Unweighted %*	Weighted N* 1058.7	Weighted %*
Age in Years				
Mean (SD)	15.80 (1.43)		15.72 (1.43)	
Gender				
Female	569	54.19%	546.8	51.65%
Male	477	45.43%	508.7	48.05%
BMI-WHO Criteria				
Underweight	122	11.62%	117	11.05%
Normal Weight	476	45.33%	469	44.30%
Overweight	208	19.81%	203.7	19.24%
Obese	172	16.38%	190.9	18.03%
Importance of PA				
Not at all important	36	3.43%	38.7	3.65%
Not too important	57	5.43%	62.3	5.89%
Somewhat important	307	29.24%	322.5	30.46%
Very important	632	60.19%	618.1	58.38%
NGSE Category				
Low	477	45.43%	481.9	45.52%
High	508	49.33%	518.9	49.01%
Psychological Distress				
Low	351	35.42%	371.4	35.09%
Moderate	325	32.80%	313.9	29.65%
High	315	31.79%	314.2	29.68%
Trauma Experience				
Yes	834	79.43%	838.8	79.23%
No	165	15.71%	167	15.78%
Body Shape Satisfaction				
Strongly disagree	262	24.95%	265.6	25.08%
Somewhat disagree	208	19.81%	213	20.12%
Somewhat agree	219	20.86%	218.5	20.64%
Strongly Agree	276	26.29%	275.1	25.99%
Sources Used to Attempt Behavior Change:				
Interpersonal				
Yes	882	84%	880.3	83.15%
No	103	9.81%	110.1	10.4%
Traditional				
Yes	754	71.81%	750.2	70.86%
No	196	18.67%	208.9	19.73%
Online				
Yes	652	62.10%	669.2	63.22%
No	247	23.52%	241	22.76%
Social Media				
Yes	714	68%	724.6	68.45%
No	234	22.29%	230.6	21.78%
Attempt Behavior Change				
Yes	946	90.09%	949.8	89.72
PA	733	77.48%	724.2	68.41
Other Behavior	184	19.45%	199.2	18.81
No	81	7.72%	84.2	7.96
PA in the Past 30 Days				
Several times a day	331	31.52%	321.2	30.34%
Once a day	170	16.19%	162.6	15.36%
Once or more a week	185	17.62%	188.7	17.82%
Once or more a month	109	10.38%	116.5	11.00%
Never	159	15.14%	174.6	16.49%

*N's may not add up to the total and percentages may not add up to 100 due to missingness.
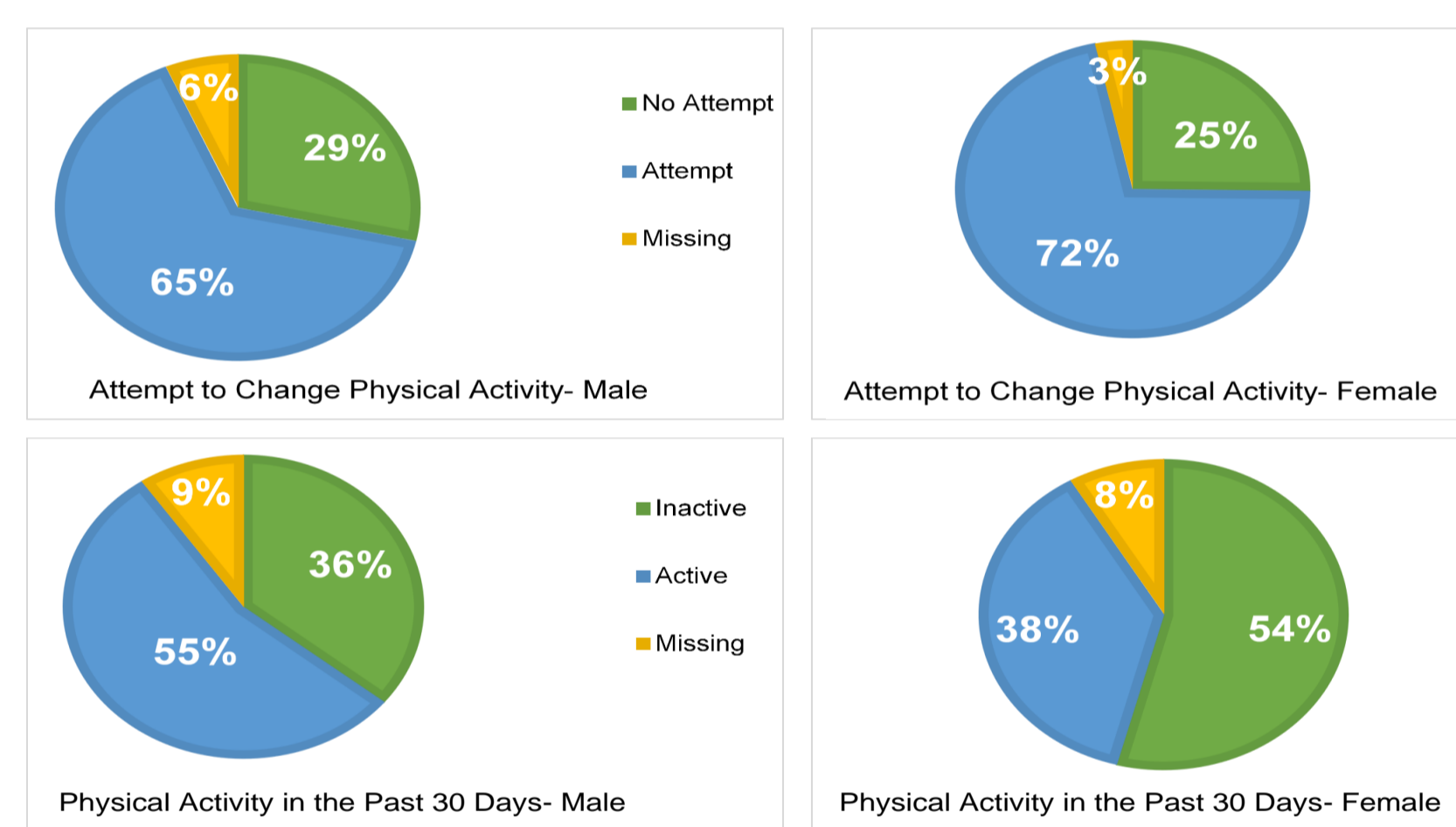SD, Standard Deviation; BMI, Body Mass Index; PA, Physical Activity; NGSE, New General Self-Efficacy.

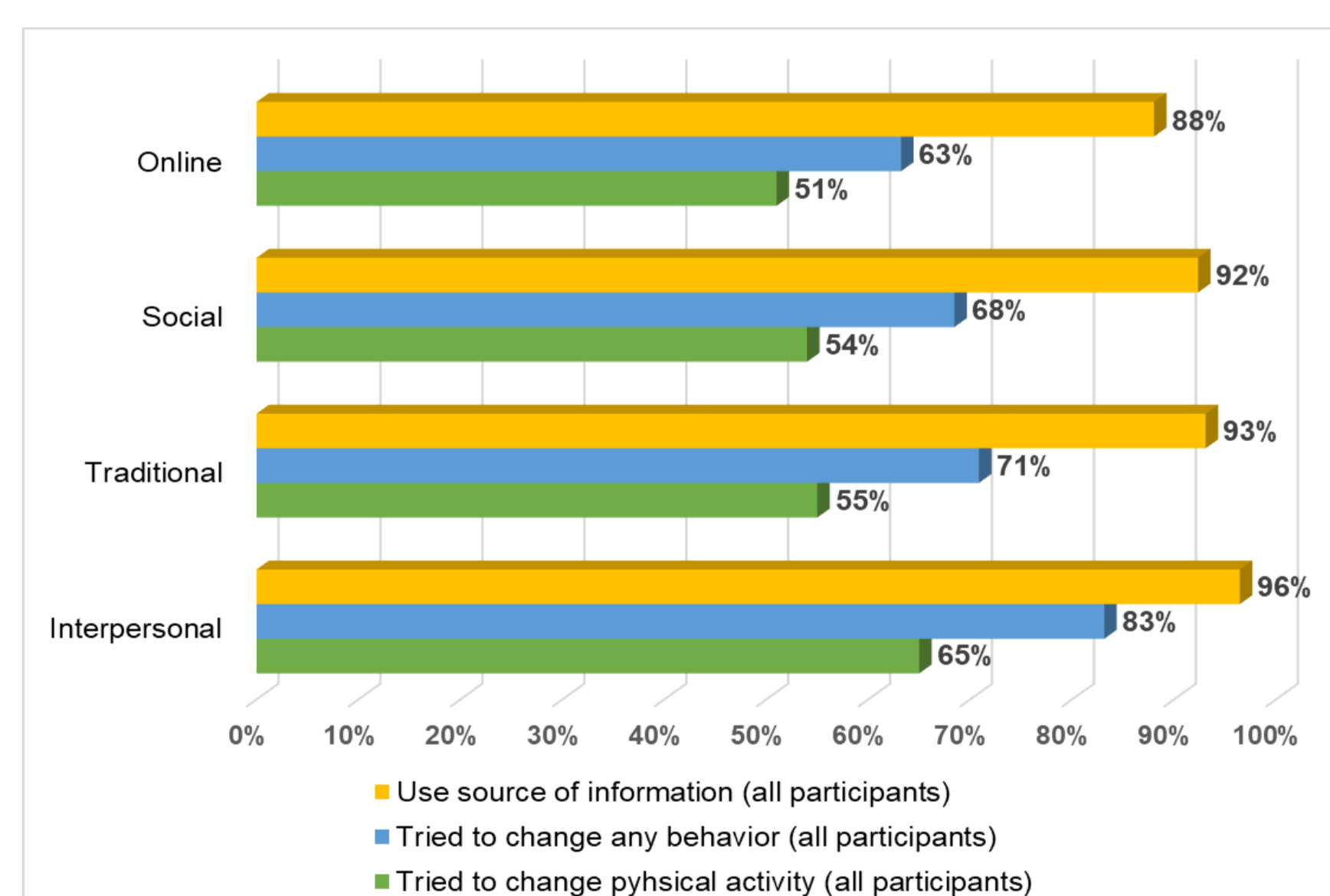**Figure 1. Attempt to change physical activity and physical activity in the past 30 days by gender.**

Figure 2. Sources of information as a reason for behavior change.

Table 2. Multivariable logistic regression analysis of the attempt to change PA: Imputed data-final model (20 imputations, weighted N=887).

Variables	OR*	95% CI		P Value†
Sources as a reason for				
Behavior Change:				
Interpersonal				
No	1			
Yes	9.35	4.15	21.08	<0.001
Online				
No	1			
Yes	2.53	1.50	4.27	0.001
Social Media				
No	1			
Yes	1.55	0.92	2.61	0.094
Traditional				
No	1			
Yes	1.07	0.65	1.76	0.796
Age				
Early Adolescence (13-15ys)	1			
Late Adolescence (16-19ys)	2.17	1.37	3.44	0.002
Importance of PA				
Not at all/ Not too important	1			
Somewhat/ A lot important	2.34	1.13	4.84	0.023
Gender				
Female	1			
Male	0.65	0.38	1.11	0.107

*Adjusted Odds Ratio for the covariates in the table.
†Wald test.
PA: Physical Activity.

Table 3. Average Marginal Effects for the Probability of Attempting PA Change.

Variables	AME	95 % CI		P Value†
	(Risk Differences) *			
Sources as a Reason for				
Behavior Change				
Interpersonal (Yes)	0.46	0.29	0.62	<0.001
Traditional (Yes)	0.01	-0.06	0.08	0.794
Online (Yes)	0.16	0.06	0.26	0.004
Social Media (Yes)	0.07	-0.02	0.16	0.123
Gender (Male)	-0.06	-0.14	0.01	0.104
Age (Late adolescence)	0.11	0.04	0.18	0.003
Importance of PA				
(Important)	0.14	0.01	0.28	0.042

*Results were adjusted for complex survey design and model covariates (imputed data, N=887)
† t Statistics.
AME: Average Marginal Effects; CI: Confidence Interval; PA: Physical Activity.
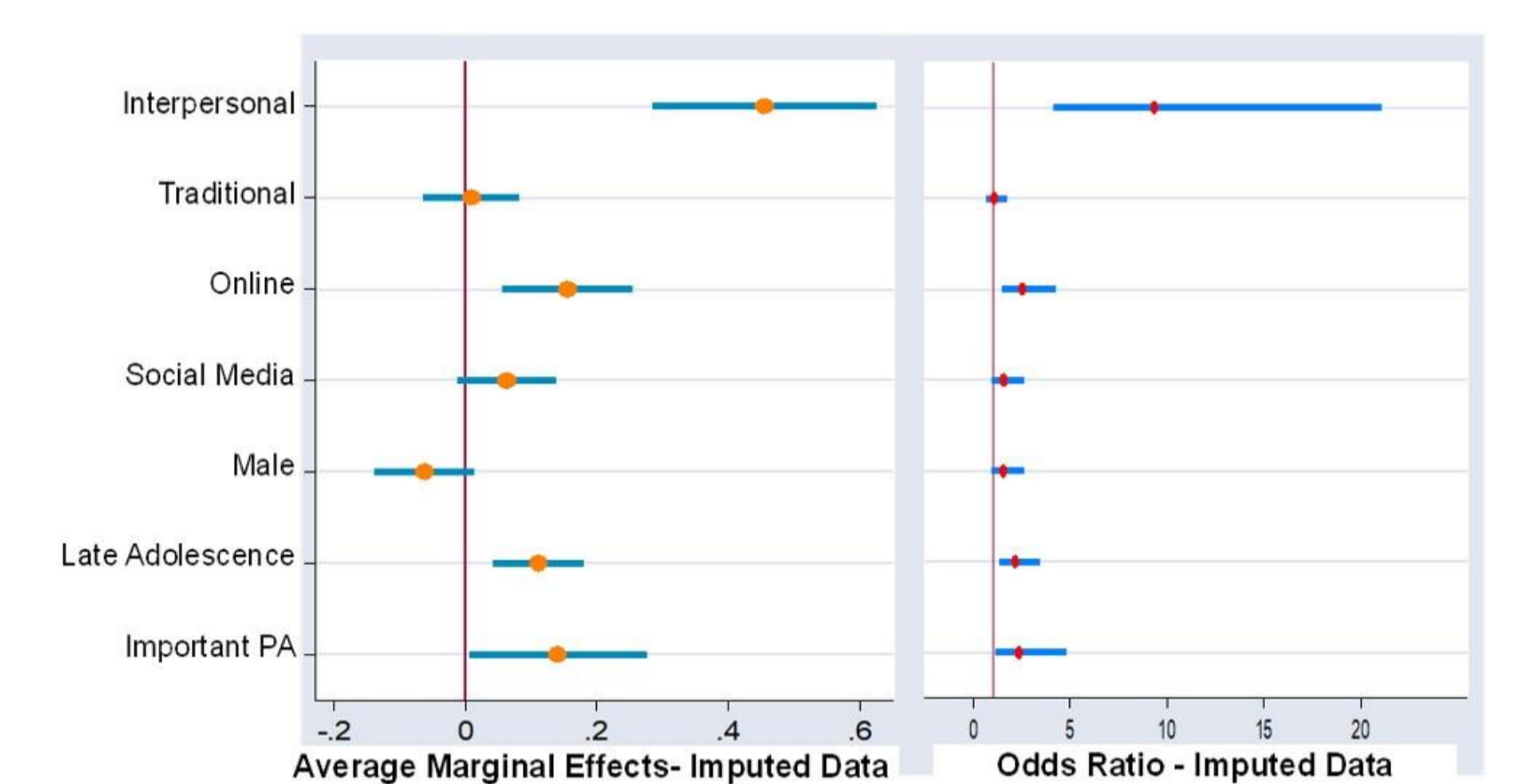

Figure 3. Average marginal effects with Odds Ratio from fitted logistic regression- Estimates with 95% Confidence Interval.

CONCLUSIONS

- Physical activity level is still suboptimal among Qatari adolescents with obvious persistent gender gap.
- The results showed that interpersonal and online sources are important in fostering behavior change among Qatari adolescents, in addition to the influence of age and personal value of PA on initiating such changes.
- Policymakers can benefit from this research in designing appropriate pa interventions that adapt multiple delivery approach.
- It is recommended that future pa-related behavior change interventions in Qatar are age- and gender- sensitive and stress the importance and relevance of pa to teen's health.

ACKNOWLEDGMENTS

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