



**hbosc**

HEALTH BEHAVIOUR IN  
SCHOOL-AGED CHILDREN

WORLD HEALTH ORGANIZATION  
COLLABORATIVE CROSS-NATIONAL STUDY



# PHYSICAL ACTIVITY, SCREEN TIME AND THE RISK OF SUBJECTIVE HEALTH COMPLAINTS IN SCHOOL-AGED CHILDREN

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# WHAT ARE SUBJECTIVE HEALTH COMPLAINTS?



- Subjective health complaints are somatic (e.g., headache, backache) and psychological (e.g., feeling low, feeling nervous) symptoms that cannot be explained by an underlying illness
- Subjective health complaints are thought to reflect a significant dimension of wellbeing
- They are prevalent in children, particularly in girls and symptoms can co-occur
- They are associated with medicine use, an increased demand for primary care service use and school absenteeism

# PHYSICAL ACTIVITY

- Regular physical activity is essential for normal growth and development and has several benefits for health and wellbeing
- The World Health Organisation (WHO) recommends that children engage in at least 60 minutes of moderate-to-vigorous physical activity (MVPA) daily
- Recent evidence from 32 countries in Europe and North America suggests that 14% of girls and 23% of boys aged 11-15 years currently meet MVPA recommendations



# SEDENTARY BEHAVIOUR

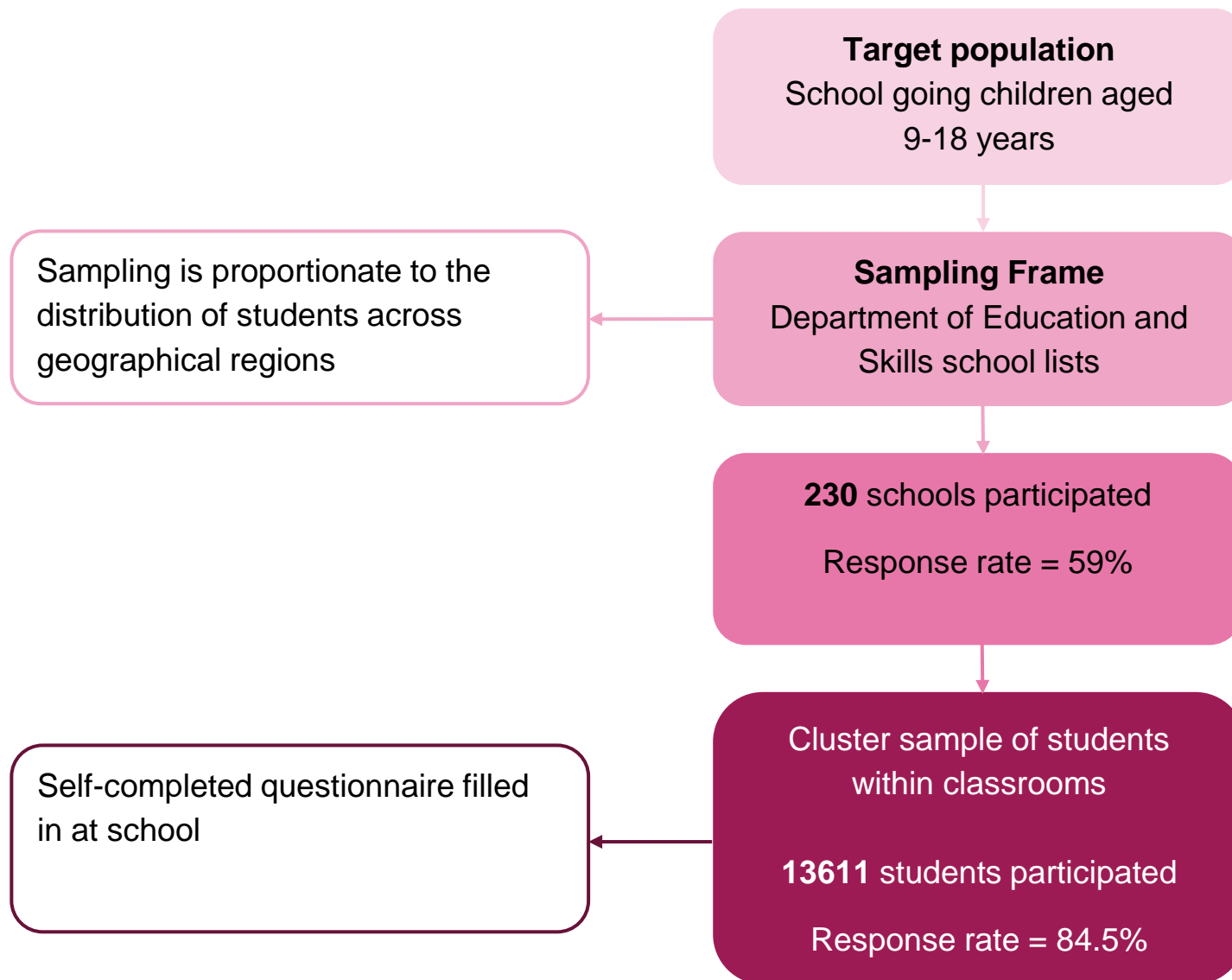
- There is a dose-response relationship between sedentary behaviour and poor outcomes in childhood e.g. obesity and low self-esteem
- A European study has estimated that children aged 12-18 years spend 70% of their waking time sedentary
- Screen time is a distinct type of sedentary behaviour - many children have access to multiple types of screens
- Recommendation - children should not exceed two hours of total screen time (TST) per day
- More than half of all children are not meeting TST recommendations



1. This study describes the prevalence of eight subjective health complaints in a large, nationally representative sample of girls and boys aged 10-17 years
2. We examine the independent association of meeting (1) physical activity and (2) TST recommendations on the risk of reporting health complaints weekly or more
3. Finally, this study explores the impact of meeting both, one or neither recommendation (physical activity and TST) on the risk of reporting health complaints weekly or more



# METHODS: HBSC IRELAND 2014



# VARIABLES OF INTEREST

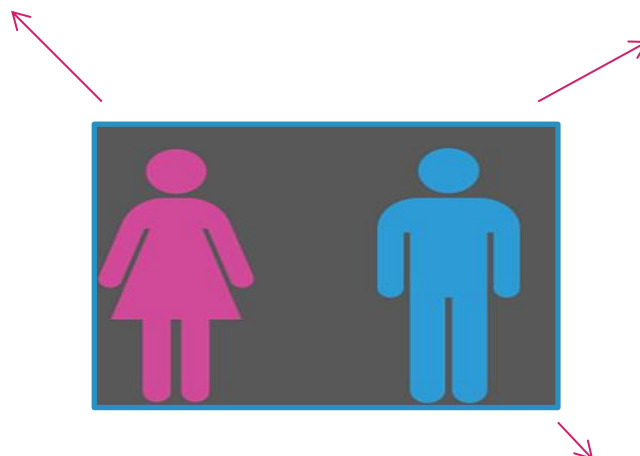
## OUTCOME

### HEALTH COMPLAINTS

1. Headache
2. Stomach-ache
3. Backache
4. Feeling low
5. Irritability or bad temper
6. Feeling nervous
7. Difficulties in getting to sleep
8. Feeling dizzy

Five response options were dichotomised for each health complaint as either:

- (1) Less than weekly
- (2) Weekly or more frequently**



## SOCIO- DEMOGRAPHICS

Age group

Gender

*(Social class)*

## EXPOSURE

Physical activity  
(WHO recommendations of 60 minute/day)

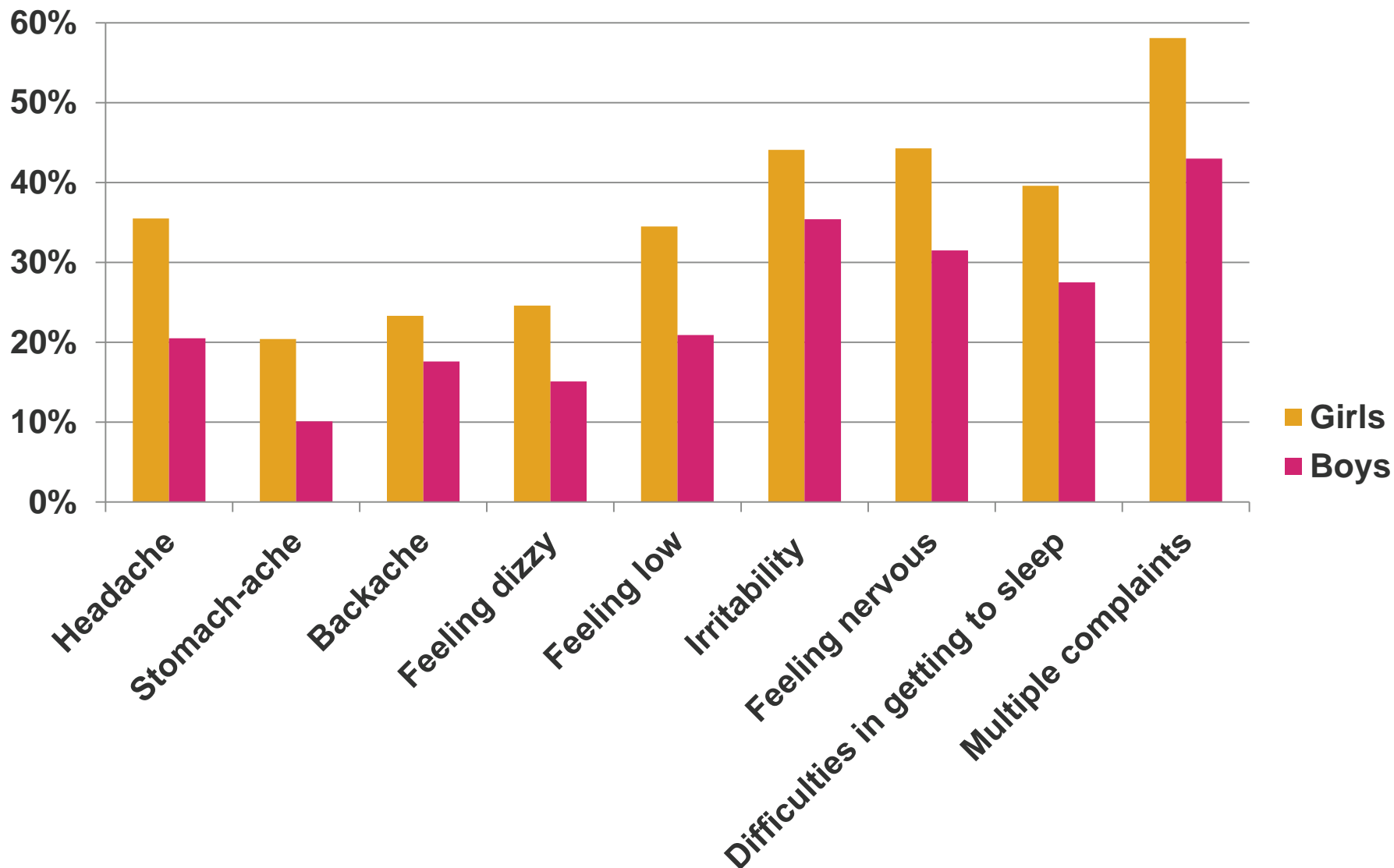
TST measured using 3 screen activity questions  
on week & weekend days  
(Recommendation  $\leq 2$  hours/day)

- Prevalence estimates were estimated
- Chi squared tests were used to test for significant differences in socio-demographics and lifestyle factors (physical activity and TST)
- Possible interactions between gender and physical activity, and gender and TST were tested
- To assess if lifestyle behaviours (physical activity and TST) were associated with the risk of health complaints, separate poisson regression models were examined
- Statistical analysis was conducted in Stata 12 IC (StataCorp LP, USA)





# PREVALENCE OF HEALTH COMPLAINTS, BY GENDER



# CHARACTERISTICS OF THE STUDY POPULATION (10474), BY GENDER

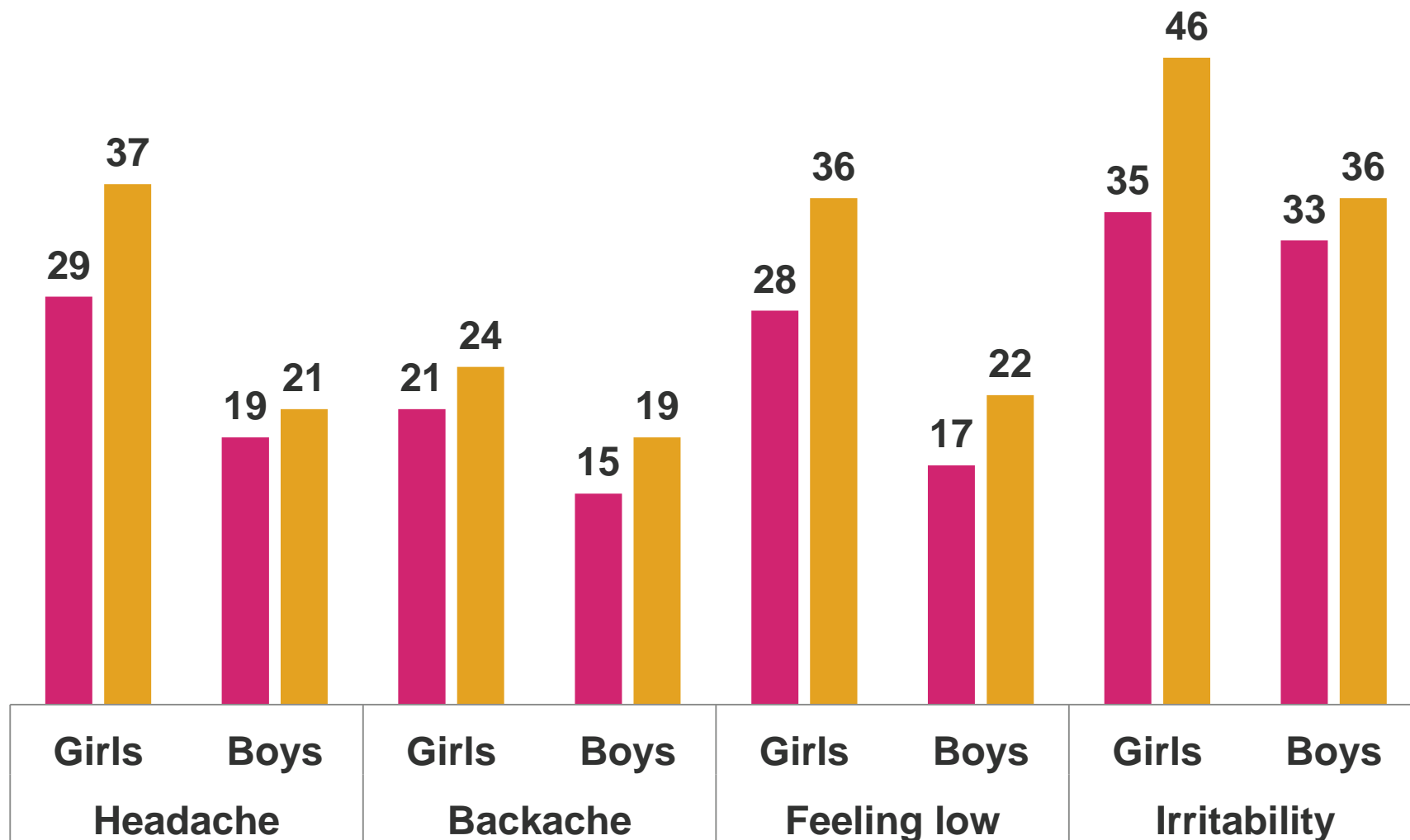


		<b>Girls N=6132 (58.5%)</b>	<b>Boys N=4342 (41.5%)</b>
		%	%
<b>Met TST recommendations</b>	Yes	21.8	24.4
	No	78.2	75.6
<b>Met MVPA recommendations</b>	Yes	16.3	30.1
	No	83.7	69.9
<b>Compliance to recommendation groupings</b>	Met both	5.1	8.7
	Met TST only	11.2	21.2
	Met MVPA only	16.5	15.1
	Met neither	67.3	55.0

# PREVALENCE OF HEALTH COMPAINTS IN GIRLS AND BOYS WHO MET PHYSICAL ACTIVITY RECOMMENDATIONS



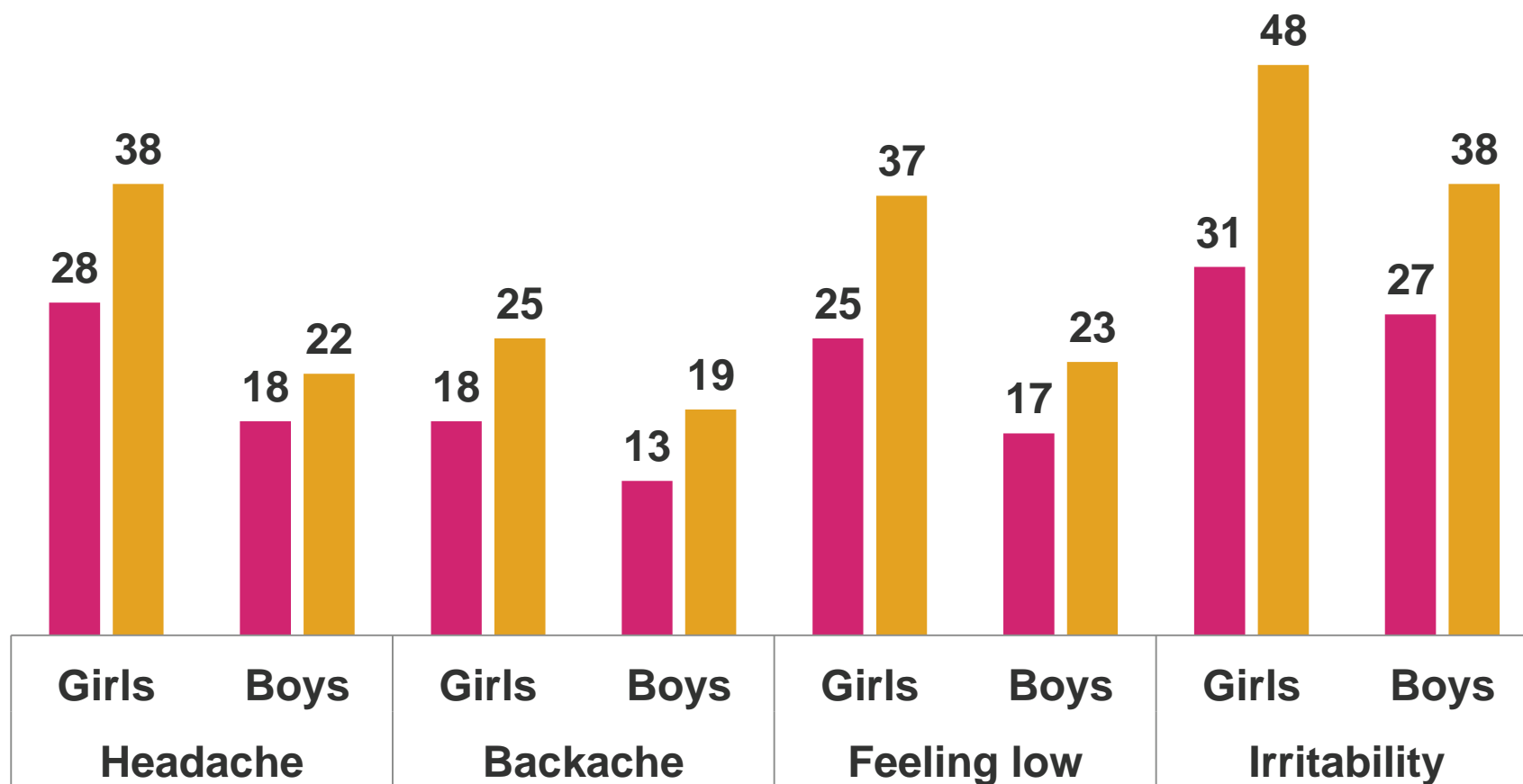
■ Yes ■ No



# PREVALENCE OF HEALTH COMPLAINTS IN GIRLS AND BOYS WHO MET TOTAL SCREEN TIME RECOMMENDATIONS



■ Yes ■ No



# THE RISK OF REPORTING HEALTH COMPLAINTS WEEKLY OR MORE BY PHYSICAL ACTIVITY AND TOTAL SCREEN TIME RECOMMENDATIONS



	Headache	Backache	Feeling low	Irritability
	IRR(95% CI)			
Met MVPA recommendations				
	1.0	1.0	1.1	1.1
	(0.9-1.1)	(0.9-1.0)	(1.0-1.2)	(1.0-1.2)
Met TST recommendations				
	1.2	1.2	1.3	1.4
	(1.1-1.3)	(1.1-1.4)	(1.2-1.5)	(1.3-1.5)
<i>*Models are adjusted for gender, age group, and either physical activity or TST recommendations</i>				

# ASSOCIATION BETWEEN ADHERENCE TO MEETING BOTH, ONE OR NEITHER RECOMMENDATION AND THE RISK OF REPORTING HEALTH COMPLAINTS WEEKLY OR MORE



	Headache	Backache	Feeling low	Irritability
	IRR(95% CI)			
<b>Met both</b>	ref	ref	ref	ref
<b>Met TST only</b>	1.2	1.2	1.1	1.1
	(1.0 -1.4)	(0.9-1.6)	(0.9-1.3)	(0.9-1.3)
<b>Met MVPA only</b>	1.3	1.5	1.4	1.4
	(1.1-1.7)	(1.1-2.0)	(1.1-1.6)	(1.2-1.6)
<b>Met neither</b>	1.3	1.4	1.5	1.5
	(1.1-1.6)	(1.1-1.8)	(1.2-1.7)	(1.3-1.7)
<i>*Models are adjusted for gender and age group</i>				

# STRENGTHS AND LIMITATIONS

## Strengths

- A large, nationally representative sample
- The questionnaire items have been previously validated
- Though self-reported screen time data may not provide accurate estimates, it is appropriate to ranking individuals

## Limitations

- Our measures are subjective and self-reported
- Residual confounding is a possibility
- As this study is cross sectional, temporal associations are possible and causality cannot be inferred

# CONCLUSIONS

- The prevalence of health complaints was high in school-aged children
- Poor lifestyle behaviours co-existed in two-thirds of girls and just over half of boys suggesting that population level measures are warranted to tackle poor lifestyles
- Children who met neither recommendation had an increased risk of health complaints compared to those who met both recommendations
- Our findings suggest that TST may be a stronger determinant of health complaints than physical activity – thus targeting TST may be particularly important for policy and practice







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*HBSC is an international alliance of over 400 adolescent health experts based in 44 countries who collaborate to develop and execute the HBSC survey*

*Every 4 years, the HBSC network collects data on 11, 13 and 15 year olds' health and well-being, social environments and health behaviours*

*The 2014 international dataset includes 219,810 students*