

## School screening program: update of the prevalence of overweight and obesity between 1996 and 2017

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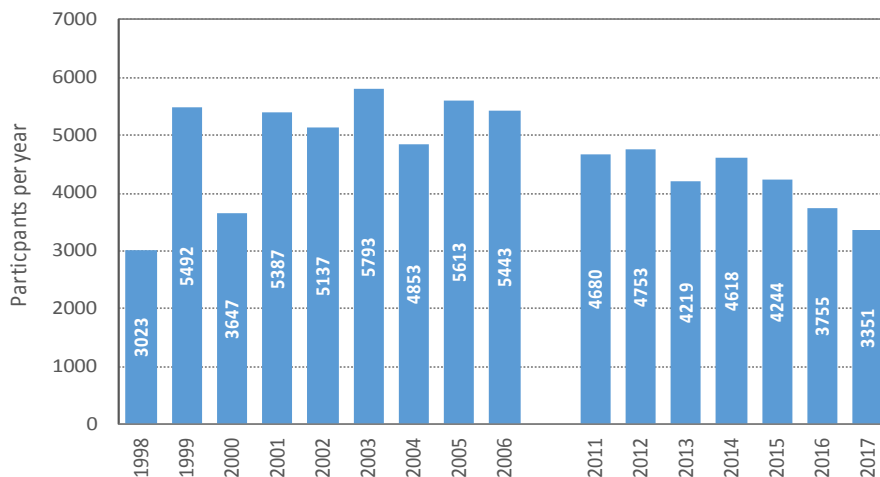
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### Summary

- Within the School Screening Program, around 16 school nurses measure selected health indicators every year, including weight, height and selected other lifestyles variables in all ~5800 students in the C2, P4, S1 and S4 grades in all schools.
- Overweight and obesity are defined along standard age and sex specific criteria by the International Obesity Task Force (IOTF).
- In 2017, weight and height were measured in 3351 students from 5760 eligible students, a participation rate of only 58%. The disappointingly low participation rate in 2017, and in recent years in general, seems to be partially related to the fact that school nurses often cannot run the school program because of concurrent duties in health centers. This issue should be addressed urgently if the screening program is to be sustained in 2018.
- The prevalence of overweight or obesity in children aged 9-16 years (P4, S1 and S4) increased by more than two times, between 1998 and 2017, from 9.3% to 26.4% in boys and from 12.9% in 1998 to 28.5% in girls. The current levels are extremely high by international comparison. The steep linear increase over time, including in recent years, underlies a major public health problem.
- The high and increasing prevalence in the pediatric population indicates that obesity cannot be handled at the individual level only and that the causes of the “obesogenic environment” should be addressed at the societal level. Interventions in multiple sectors are needed, including banning advertisement and promotion of junk foods and beverages in schools and on TV, introduction of a tax on sugar drinks, board availability of water fountains in public settings, mandatory food labeling for prepackaged foods, standards for school meals, increasing number of physical activity at school, etc. Implementation of the National School Nutrition Policy also needs to be strengthened.
- Continued monitoring of overweight/obesity in school children of Seychelles is an essential mechanism to guide public health policy. The School Screening Program should be strengthened, including by ensuring that school nurses to have sufficient time to perform all components of the program, including performing screening and providing adequate counseling about healthy behaviors and nutrition to all eligible students .

The School Screening Program is run by the Ministry of Health. Around 15-20 school nurses have been screening all students of C2, P4, S1 and S4 (mean ages 5.4, 9.2, 12.5 and 15.5 years) in all schools every year since 1998. Around 5500 students are eligible for screening every year in these 4 grades. Anthropometric variables (e.g. weight and height) and blood pressure are measured and students are asked about tobacco use, alcohol use, substance use, and physical activity. The use of the same methods enables to assess trends over years. Overweight and obesity are defined along the standard age- and sex-specific criteria of the International Obesity Task Force (IOTF).

**Figure 1. Number of students in C2, P4, S1 and S4 screened each year between 1998 and 2017**



Although the number of eligible children in C2, P4, S1 and S4 is fairly constant over time (~5800 per year), the participation rate has decreased to worrying low levels during the past 2-3 years (around 50% in 2017). School nurses report that they often cannot attend school screening as scheduled because of concurrent duties at health centers. Low participation in the screening program must be addressed and corrected if the screening program is to be sustained in the coming years.

**Figure 2. Participation rate of the school screening program by calendar year and grade**

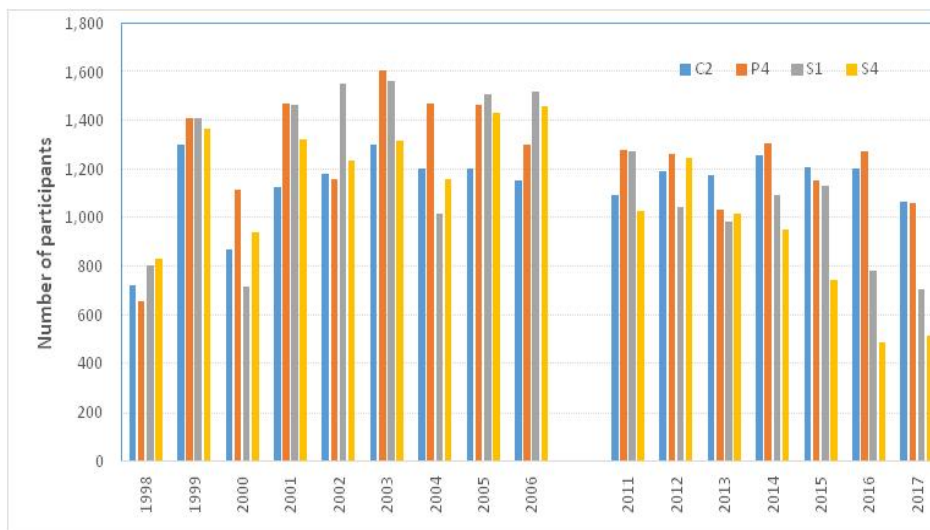


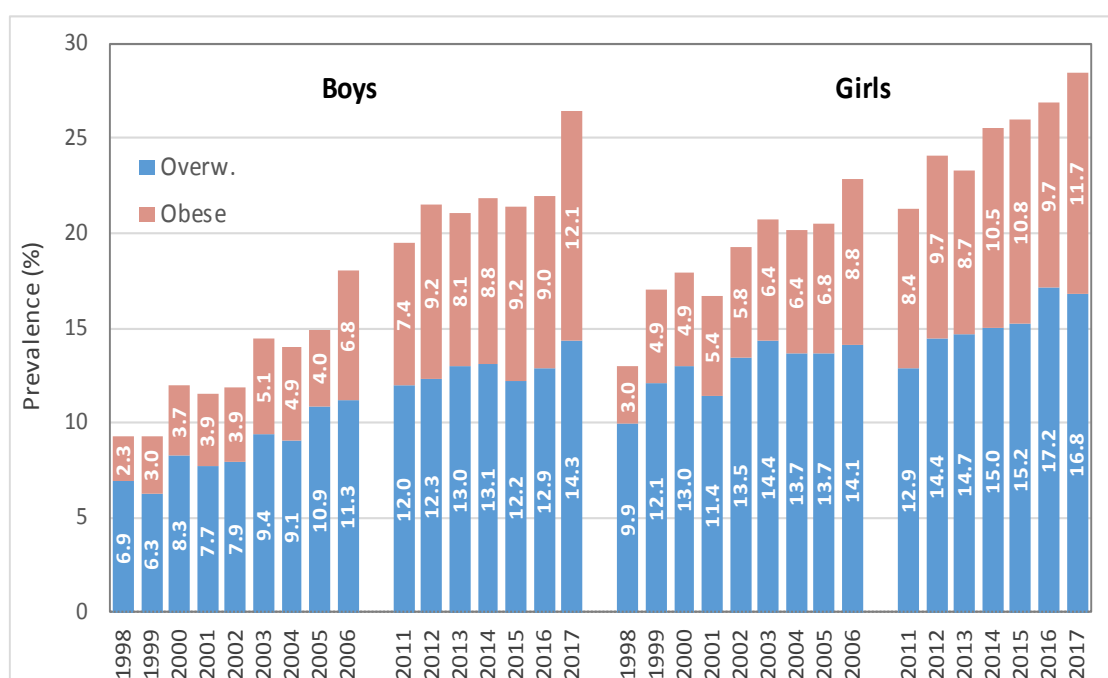
Figure 2 shows that the decreasing participation rate during the past 3 years occurred mainly among the higher grades (S1 and S4). Low participation in S1 and S4 is unfortunate because it is particularly important to assess overweight and obesity accurately at this age because weights gain in teenage years tends to track into adulthood with serious consequences on health (e.g. diabetes, heart disease, some cancers, arthrosis, etc.).

**Table 1. Participation in the school screening program in 2017 by school and grade**

School	C2			P4			S1			S4			Total		
	Partic.	Elig.	%	Partic.	Elig.	%	Partic.	Elig.	%	Partic.	Elig.	%	Partic.	Elig.	%
AAP	93	94	98.9	69	76	90.8							162	170	95.3
ABO	73	76	96.1	57	58	98.3	144	146	98.6	118	139	84.9	392	419	93.6
ACA	0	47	0.0	47	51	92.2							47	98	48.0
AET	32	39	82.1	54	64	84.4							86	103	83.5
ARO	67	67	100.0	65	67	97.0	105	173	60.7	111	163	68.1	348	470	74.0
BEA	90	92	97.8	70	77	90.9							160	169	94.7
BLA	41	45	91.1	38	38	100.0							79	83	95.2
BEL							0	131	0.0	0	136	0.0	0	267	0.0
BOM	16	17	94.1	28	30	93.3							44	47	93.6
BSA	70	71	98.6	85	87	97.7							155	158	98.1
BVA	59	60	98.3	53	53	100.0	118	123	95.9	0	115	0.0	230	351	65.5
CAS	33	37	89.2	37	40	92.5							70	77	90.9
ERI							131	140	93.6	110	153	71.9	241	293	82.3
GAM	27	32	84.4	16	16	100.0							43	48	89.6
GAP	0	56	0.0	0	66	0.0	0	129	0.0	0	105	0.0	0	356	0.0
GLA	24	28	85.7	23	28	82.1							47	56	83.9
IND	0	75	0.0	0	75	0.0	0	75		0	74		0	299	0.0
LAD	47	52	90.4	37	38	97.4	46	47	97.9	37	43	86.0	167	180	92.8
LMI	18	22	81.8	23	23	100.0							41	45	91.1
LRO	114	132	86.4	95	129	73.6							209	261	80.1
LRE	0	49	0.0	0	132	0.0							0	181	0.0
MFL	0	91	0.0	0	81	0.0	0	128	0.0	0	91	0.0	0	391	0.0
PER	59	68	86.8	65	67	97.0							124	135	91.9
PGL	0	34	0.0	22	25	88.0							22	59	37.3
PLA	60	63	95.2	38	40	95.0	166	179	92.7	97	134	72.4	361	416	86.8
PLS	143	148	96.6	117	122	95.9	0	165	0.0	42	131	32.1	302	566	53.4
TAK	0	41	0.0	21	21	100.0							21	62	33.9
<b>Total</b>	<b>1'066</b>	<b>1536</b>	<b>69.4</b>	<b>1'060</b>	<b>1504</b>	<b>70.5</b>	<b>710</b>	<b>1436</b>	<b>49.4</b>	<b>515</b>	<b>1284</b>	<b>40.1</b>	<b>3351</b>	<b>5'760</b>	<b>58.2</b>

The table shows that participation rate was around 70% in C2 and P1 but only 40-60% in S1 and S4.

**Figure 3. Prevalence of overweight and obesity in boys and girls at age 9-16 years (P4, S1, S4) between 1998 and 2017**



The prevalence of children with overweight or obesity has steadily increased between 1998 and 2017, with no sign of abatement in recent years. The current levels are high at international levels (e.g. substantially higher than in several Western European countries). The high prevalence in the pediatric population underlies that obesity cannot be handled at the individual level only and the causes of the “obesogenic environment” should be addressed at the societal level.

## **Recommendations**

1. The very high and increasing prevalence in the pediatric population indicates that obesity cannot be handled at the individual level only and that the causes of the “obesogenic environment” must should be addressed at the societal level. Interventions to address the societal roots of the obesogenic environment are needed in multiple sectors, including banning advertisement and promotion of junk foods and beverages in schools and on TV, introduction of a tax on sugar drinks, mandatory food labeling for prepackaged foods, standards for school meals, increasing number of physical activity at school, etc.
2. In particular, implementation of the National School Nutrition Policy should strengthened, including ensuring the availability of healthy foods in the school setting (e.g. in tuck shops and for school meals) and sustaining the provision of free cold water in all schools through water fountains as an alternate choice to sugary drinks.
3. Promote physical activity in the school setting, including strict implementation of two (and if possible three) periods of physical activity per week for all students, with a focus on physical activity that is suitable to all children.
4. It is essential to continue monitoring of overweight/obesity and other health markers in schools to help guide health policy and programs. In particular, it is important that the school health nurses can dedicate sufficient time for effective implementation of all the components of the School Health Program including screening students, counseling on healthy lifestyles and nutrition, and referral of students with abnormal conditions to specialists.
5. The Seychelles National NCD Strategy (adopted by Cabinet in 2016) has set the target of a 0% relative increase of obesity between 2010 and 2025, for both children and adults. The target is consistent with the voluntary target set by World Health Organization in the Global Plan of Action for the Prevention and Control of Noncommunicable Diseases 2013-2020, which was endorsed by all WHO member states in 2013. Along this plan, countries agreed to regularly report on 25 core indicators, including the prevalence of overweight and obesity in children and adolescents. This further stresses the importance of the School Screening Program as an important tool to provide such data and help guide health policy and programs.