How is teenagers' and young adults' self body image influenced by social factors

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Outline

Motivation

- Individual weight perception is not objective but is highly influenced by subjective factors.
- Existing literature has shown the influence of socio-demographic factors, past weight fluctuations, cultural and social norms, psychopathology and biological variables in this misperception.

Literature Review

- Blokstra, Burns, and Seidell [1999] observed that only half of the individuals in their sample had accurate perception of their weight.
- Chang and Christakis [2003] found that 27.5% of women and 29.8% of men misclassified their own weight status according to medical standards.
- Grey [1977] found that gender has an impact on the direction of the distortion: females tend to see themselves fatter, males lighter than their actual weight.

Literature Review (Cont.)

- Slade [1994] concluded that self-image is modelled as a loose mental representation of the body which in addition to individual factors is also affected by cultural and social norms.
- In our research we are interested in studying the influence that peer effects, in an individual's environment, have in this misperception.

Body Mass Index [BMI]

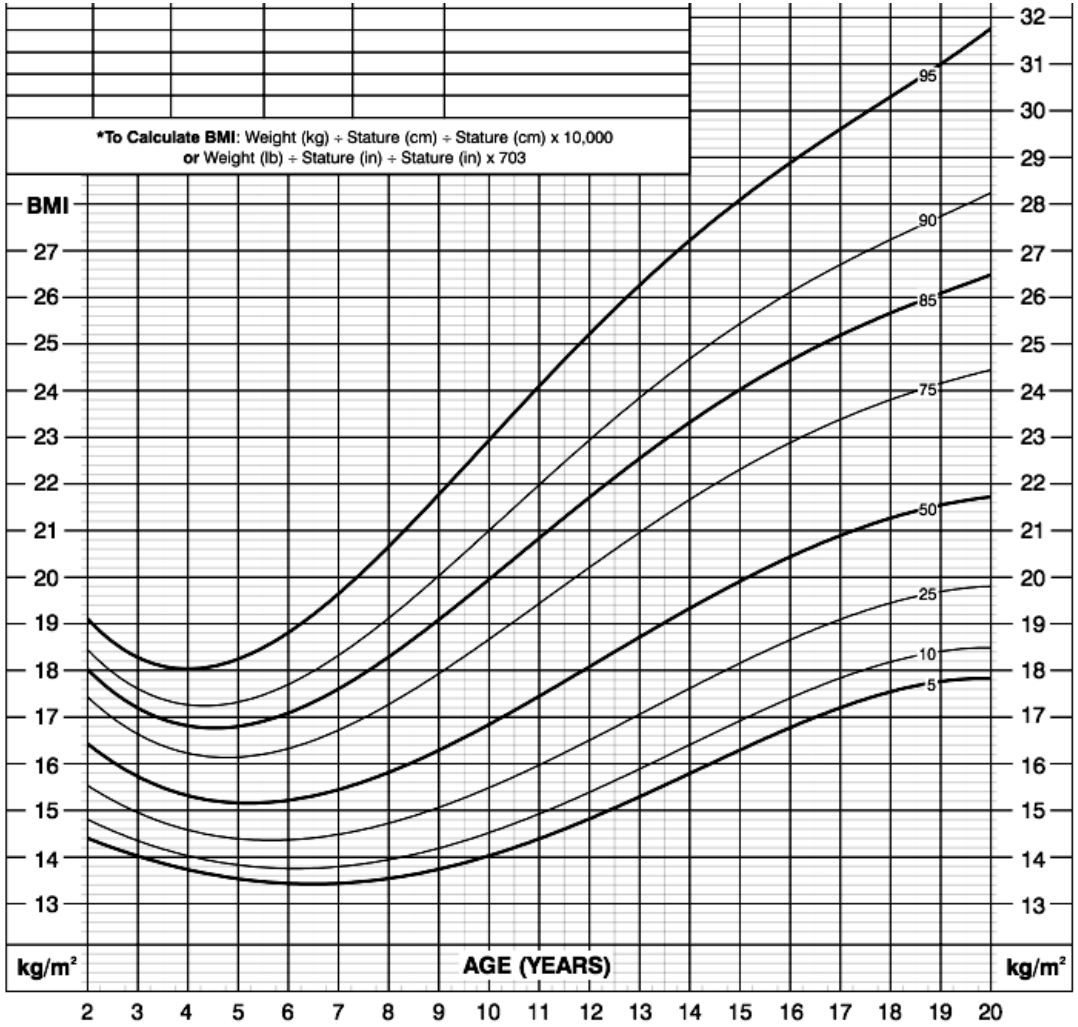
- Proxy for estimating human body fat based on an individual's weight and height. [Objective]

$$\text{BMI} = \frac{\text{Mass (kg)}}{\text{Height(m)}^2}$$

- Adults older than 20 are categorised as follows:
  - Underweight: BMI<18.5
  - Normal: BMI$\in [18.5, 25]$
  - Overweight: BMI$\in (25, 30]$
  - Obese: BMI>30

- Children older than 2 are categorised according to their age and gender.

Body Mass Index [BMI] (Cont.)



Girls (aged between 2 to 20) BMI classification according to age

Overview

- National Longitudinal Study of Adolescent Health [Add Health] uses a nationally representative sample of adolescents, initially in grades 7-12 in the United States during the 1994-95 school year (wave 1).
  - Wave 2 was conducted in 1996 and wave 3 in 2001-2002. The fourth and final wave was not used.
- First 2 waves include data about the responders' friendships [For up to 5 female and male friends].
- The first wave includes data on the school network.

Shortcomings

- Due to data confidentiality, information about responders' friends identity as well as school information is unavailable.
- This restricts us from studying peer influence and school/state specific effects. We can only study network structure's influence and individual effects.
- Furthermore, we are unable to study the effect of peer group's body image.

Variables of Interest

- The dependent variable of interest is the weight image of responders.
- Socio-demographic variables include gender, age, health condition and physical exercise.
- Time-varying network variables include the friendship quality with the best male and the best female friend of the responder [when applicable]

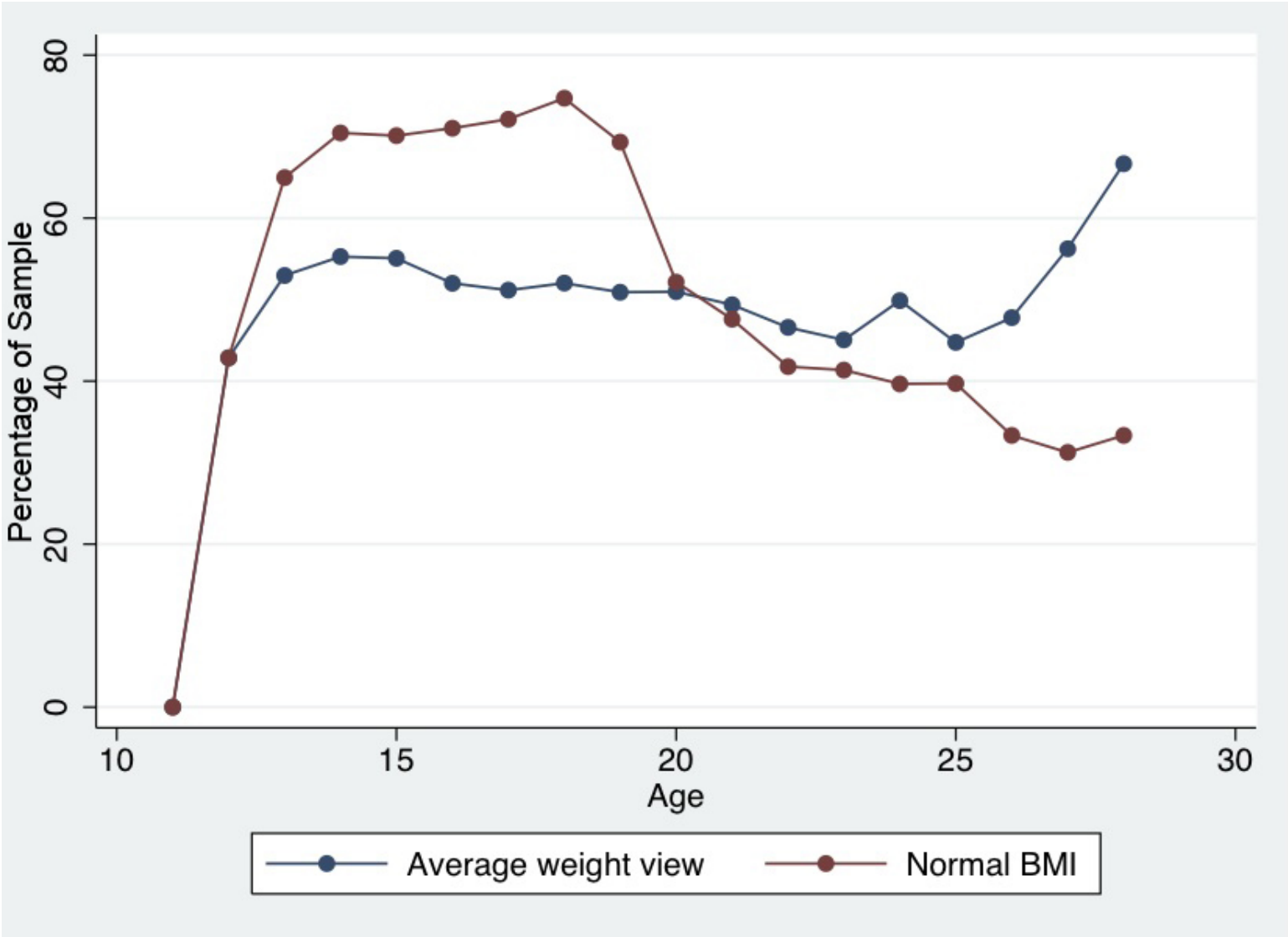
Variables of Interest (Cont.)

- To measure time-invariant network's structure we use the responder's mean geodesic distance.
- The mean geodesic distance calculates the average path length between the responder and his/hers school network.
  - Individuals who are not 'popular', or have no 'popular' friends will take on larger values.
  - To control for individuals who form a small isolated clique within the school network, we include in our regressions the number of friends nominated by each individual.

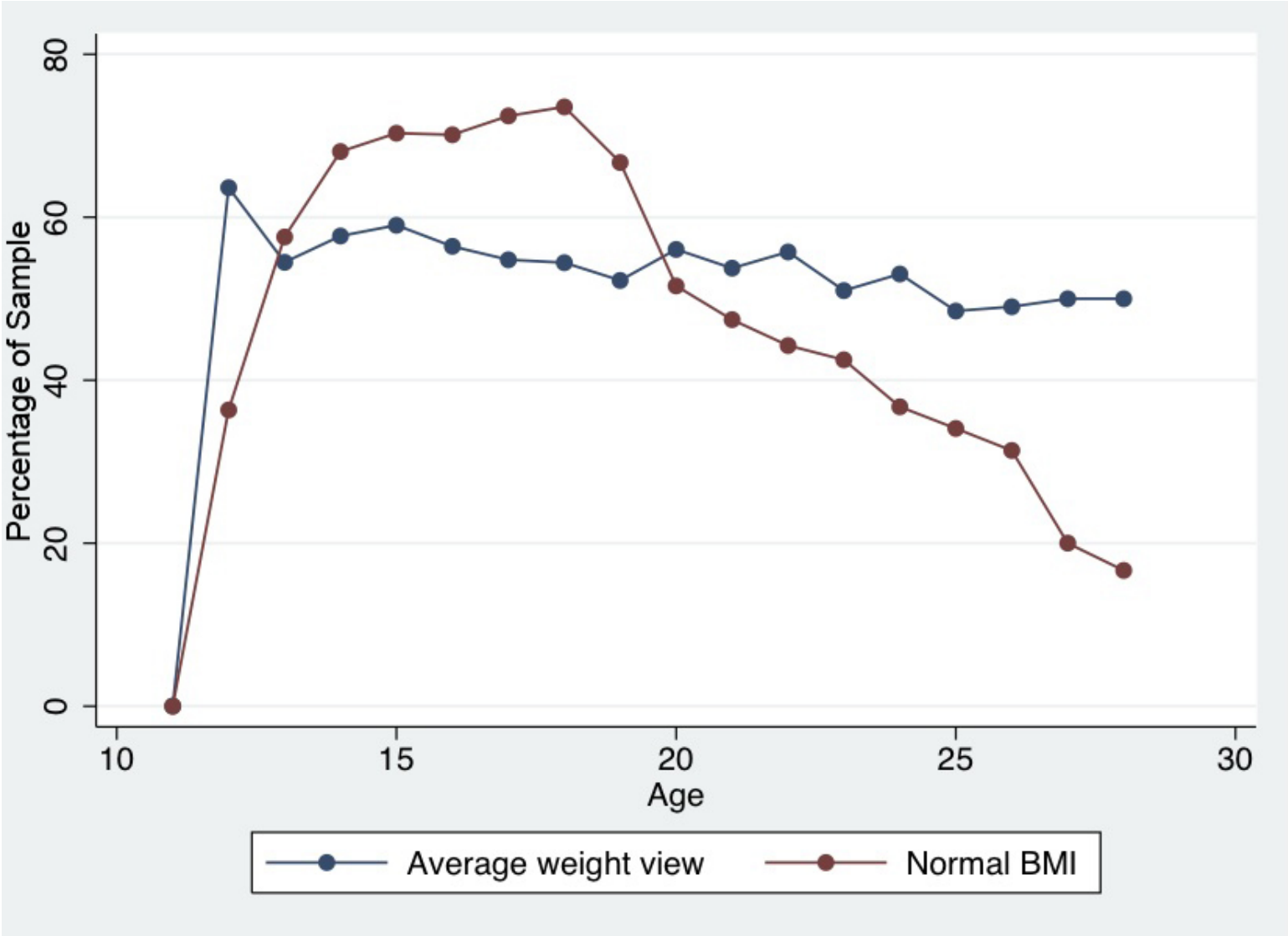
Approach

- The approach we followed is the following:
  - (i) We performed Pooled OLS regressions to obtain base results.
  - (ii) We study the effect of socio-demographics and time-varying network variables, by implementing an individual fixed effects estimation.
  - (iii) We use the Hausman-Taylor model to study the effect of all network variables considered, together.

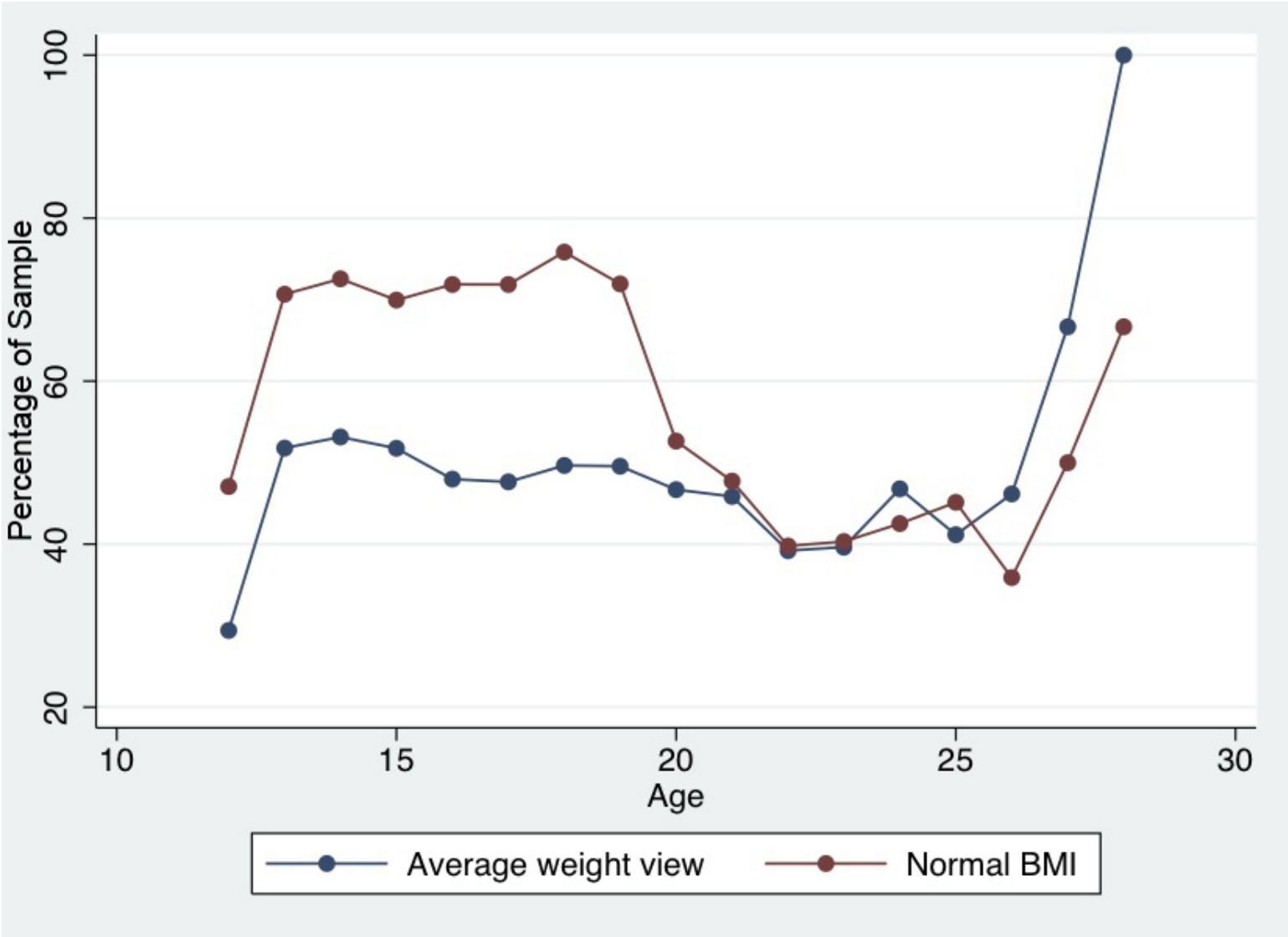
Weight Opinion Vs. Weight Reality



Weight Opinion Vs. Weight Reality [Men]



Weight Opinion Vs. Weight Reality [Women]



Results

	(1) OLS	(2) FE	(3) HT	(4) FE	(5) FE	(6) HT	(7) HT
Age	.04599***	-.03678**	-.0015287	.0809	.12638	.11439	.12067
Age^2	-.00127***	.00122***	-.000002	-.00229	-.00316	-.00311	-.00323
Gender	.33874***		.33345***			.32551***	.31785***
Bmi	.4996***	.17676***	.37159***	.05882***	.07590***	.38161***	.39164***
Physical Activity	.00438*	-.00498	-.0036	-.00187	-.00444	-.00425	-.00605
Health Condition	.08168***	.03681***	.06138***	.01276	.01215	.05368***	.05254***
Best Male Friend Quality				-.00797		.00468	
Best Female Friend Quality					.01075		.00345
Out-degree			-.00046			-.00354	-.00316
Geodesic Mean			-.01576***			-0.02334***	-.02249***
R^2	.3356						

*** p=0.99, ** p=0.95, * p=0,90

Discussion

- As expected, an individual's BMI index plays a significant role in his/her body perception.
- Our results confirm S. H. Grey's research. The female subpopulation of the sample seems to perceive itself as more overweight on average.
- Health also seems to affect body perception. Better health will decrease body-weight misperception.

Discussion (Cont.)

- Friend quality is highly insignificant under all model specifications.
- The geodesic mean although having a very small magnitude, is highly significant under all specifications. However, it has the opposite effect than what expected since a more 'popular' person will perceive himself as more overweight.

Possible Extensions / Conclusion

- A binary or multinomial response model could provide, or not, verification of our results on whether a greater geodesic mean value increases the weight misperception.
- A less restrictive version of the database would be hugely helpful in examining peer group effects further and also, accounting for school fixed effects.