University of Northampton

Summary

Student Health and Well-being Project

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Project Background

Attending university marks a significant period in many peoples' lives. This is often a period characterised by greater autonomy in decision making, new social influences and peer networks, exposure to novel stressors, increased levels of independence and, for many university students, the requirement to self-manage their overall lifestyle. Importantly, the transition can result in behaviour and environment changes that can cause adverse health outcomes for many young adults (Deliens et al., 2015). These adverse health outcomes may include poor mental health (Auerbach et al., 2018; Lipson et al., 2019), decreased physical activity [PA] (Vella-Zarb & Elgar, 2009), increased sedentary behaviours (Castro et al., 2020), disrupted sleep patterns (Russel et al., 2019), sub-optimal dietary behaviours (Tanton et al., 2015), weight gain (de Vos et al., 2015), elevated alcohol consumption (Wicki et al., 2010) and elevated rates of substance misuse (Bogowicz et al., 2018). Furthermore, the COVID-19 pandemic may have resulted in a decrease in mental well-being, physical activity engagement and an increase in stress and perceived time spent sedentary in UK university students (Savage et al, 2021). Collectively, the literature suggests that university student populations often have unique health challenges compared to the general population.

In the academic year 2021/22, a total of 2.86 million people were registered at a higher education institution in the United Kingdom (U.K) (House of Commons Library, 2023). This represented approximately 4.2% of the UK population and due to the university setting having unique risk factors for the development of health-negating behaviours, the health of university students is a contemporary and important public health issue. Despite this, there is limited research on health-related behaviours and the inter-relationships between these hazardous behaviours in this population. Therefore, this project aimed to provide initial insight into student behaviours as a first step to identify further lines of enquiry to co-produce solutions to enhance student health behaviours and subsequent university experience both socially and academically. This research aligns to the University of Northampton strategic plan 'Transforming Lives + Inspiring Change' via contributing to all three of the core elements: Super Supportive, Future Focused and Social Impact. Notably, the project is aligned with the universities aim to be 'Super Supportive' by recognising the student journey holistically and focusing on health and wellbeing of our students outside of just academic concerns. Furthermore, the University of Northampton aims to address numerous of the United Nations Sustainable Development Goal 3, and this research project directly contributes towards SDG3 "Good Health and Well-being" (University of Northampton, 2023). This research is locally focused but has the potential to be scaled up nationally.

Aims and objectives

The aim of this research was to explore current health behaviours within a higher education student cohort at the University of Northampton. The objectives were to capture through survey:

1. Self-reported physical and mental health, and social connection within the university

2. Self-reported physical activity habits, awareness of physical activity guidelines, and sedentary behaviours

3. Self-reported nutrition habits and barriers to healthy eating

4. Self-reported alcohol and nicotine consumption patterns

5. Associations between demographic factors and the above variables

Study setting

The study was conducted at the University of Northampton, UK, a post-92 university that offers a range of undergraduate and postgraduate degrees. The total on-campus student population at the institution at time of data collection was 12,554. Of these students, the distribution of study is as follows: Stand Alone Module (n=225), Foundation Degrees (n=504), Bachelors (n=8442), Taught Postgraduate (n=3136) and Research Postgraduate (n= 247). The current full-time undergraduate student population demographics are predominately Female, 66.6% (Male, 33.3%), White, 50.9% (Black or Black British, 24.8%; Overseas, 11.5%, 11.5%; Asian or Asian British, 5.9%; Other/Mixed, 5.9%; Not Known, 1.0%) and report No Known Disability, 86.3% (Other Disability, 9.4%; Specific Learning Disability, 4.3%). Full demographic breakdowns of the student population is publicly available at: https://www.northampton.ac.uk/about-us/governance-and-management/key-data-and-reports/staff-and-student-equality-data-reports/student-data/.

Study design

Cross-sectional exploratory mixed-methods study of the student population using a self-report anonymous online survey to obtain quantitative and qualitative data.

Key Findings

Demographics

Table 1. Demographic details of respondents

Self-reported characteristics	Responses

	n	%
Age		
18-24	292	49%
25-34	199	34%
35-44	65	11%
45-54	29	5%
55-64	4	1%
65+	1	0%
Sex		
Female	400	68%
Male	173	29%
Other	14	2%
Prefer not to say	3	1%
Sexual orientation		
Heterosexual	477	81%
Gay, Lesbian, Bi and Other	89	15%
Prefer not to say	24	4%
Ethnicity		
Asian, Asian British, Asian Welsh	182	31%
Black, Black British, Black Welsh, Caribbean or African	158	27%
Mixed or multiple	8	1%
White	231	39%
Other	10	2%
Study commitment		
Full time	576	98%
Part time	14	2%
Level of study		
Undergraduate	339	58%
Postgraduate	242	42%
Living situation during term time		
University managed accommodation	110	19%
Private accommodation in Northampton	221	37%
Private accommodation outside of Northampton	122	21%
At home with parents or caregivers	94	16%
Other	43	7%
Self-rated physical health		
Very good	136	23%
Good	289	49%
Fair	122	21%
Poor	37	6%
Very poor	6	1%
Self-rated mental health		
Very good	94	16%
Good	209	35%

Fair	181	31%
Poor	79	13%
Very poor	27	5%

Self-reported physical health and self-reported mental health are displayed in Figure 1 and Figure 2, respectively. Sexual minority students were significantly more likely to report worse physical and mental health ($p<0.001$). Responses to the statement “"I feel part of the student community and have a sense of social connection to the university" are displayed in Figure 3, with sexual minority students significantly more likely to report a lower sense of belonging and social connection ($p=0.032$).

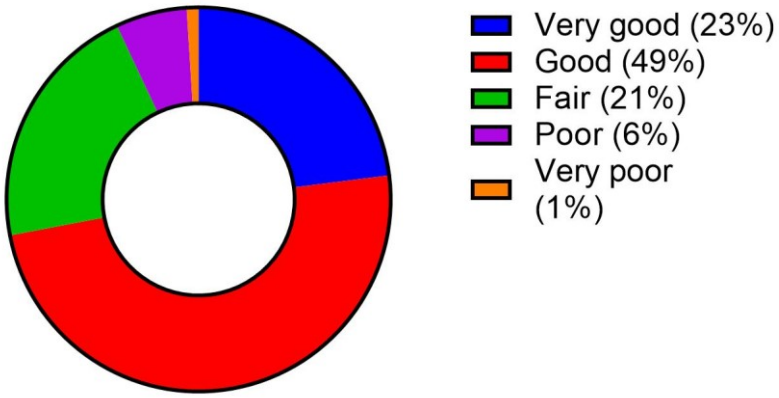

Figure 1. Responses (% of total) to the question “In general, how would you rate your physical health?”

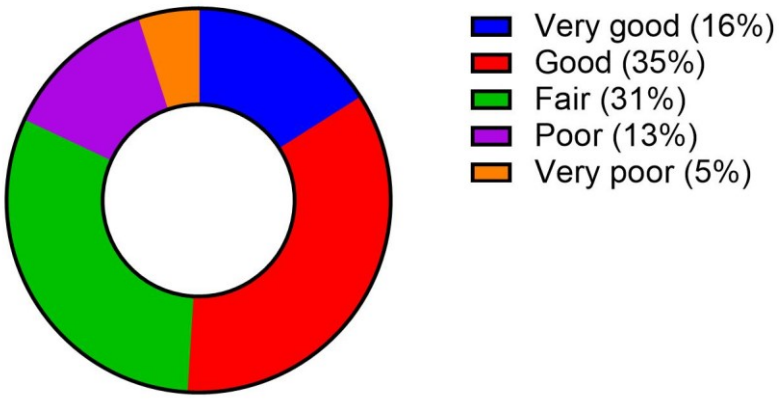

Figure 2. Responses (% of total) to the question “In general, how would you rate your mental health?”

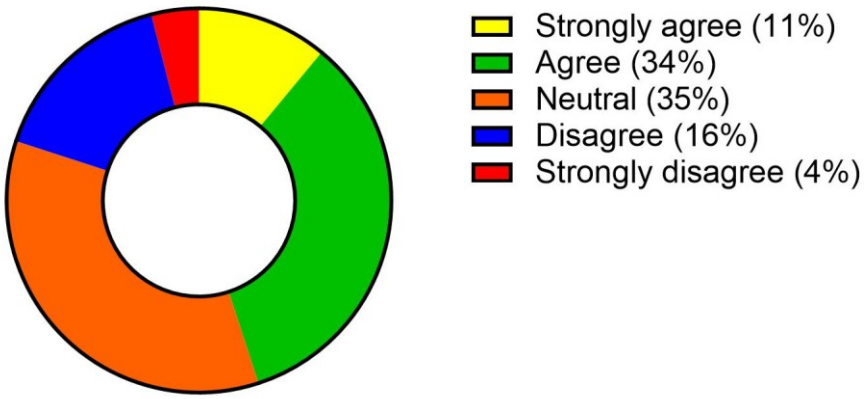

Figure 3. Responses (% of total) to the statement "I feel part of the student community and have a sense of social connection to the university"

Physical Activity

Self-reported PA levels are displayed in Figure 4. Adjusting for the threshold of ≥3 days of 30 minutes of MVPA to estimate prevalence of meeting the current PA guidelines of 150 minutes per week, 37.1% (n=219) of the respondents did not meet guidelines. In the sample, 56% (n=328) did not meet PA guidelines for engaging in exercises to increase muscle strength and endurance on at least 2 days per week. A lack of awareness of UK PA guidelines was reported by 55% of respondents. Statistically significant differences were observed with comparisons of distributions of responses across ethnicity (p= <.001) and level of study (p=.013). For those comparison showing statistically significant differences in distributions of responses, white students and undergraduates had a higher self-reported level of PA.

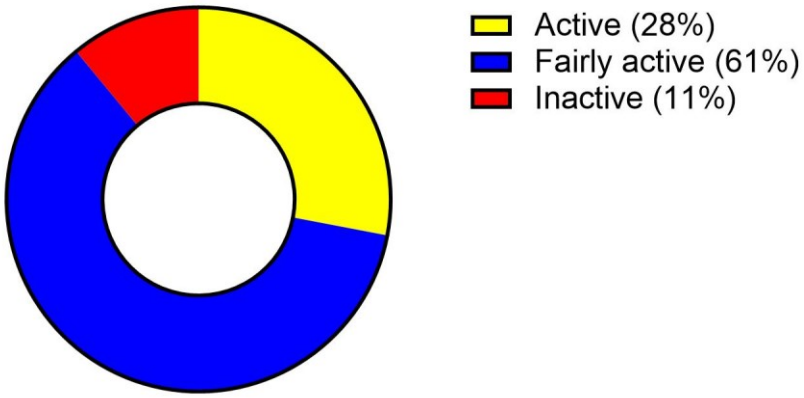

Figure 4. Responses (% of total) for self-reported physical activity levels

Only 9% (n=55) respondents reported being involved in any sport teams or recreational activities involving physical activity at the university. A total of 371 (63.0%) reported that their physical activity habits had changed since starting university. Of these, the change was described as overall positive (46.0%), overall negative (36%) and neither positive nor negative (11.5%).

A total of 284 (48%) students reported feeling there were barriers to participation in PA. Of the respondents who were classified as "inactive based on self-reported PA responses, 54.8% reported barriers to participation in PA. The most cited barriers to participation in physical activity were cited as "lack of money" (n=154), "feel too tired" (n=139), "lack of time" (n=132) and "lack of motivation" (n=123). Female (p=0.31), LGBTQ+ (p=0.003), white (p=0.001) and undergraduate (p=0.002) students reported barriers to physical activity to a greater extent.

Sedentary Behaviour

There were 377 valid responses to question on estimated sitting time on a typical weekday. The median reported sitting time on weekdays was 8 hours (IQR 5-10 hrs). There were no significant differences in the amount of time spent sitting on weekdays across any of the demographic groups.

Dietary Habits

Responses to the question "How often do you consume food and/or beverages purchased at establishments located on the University of Northampton campus?" are displayed in Figure 5.

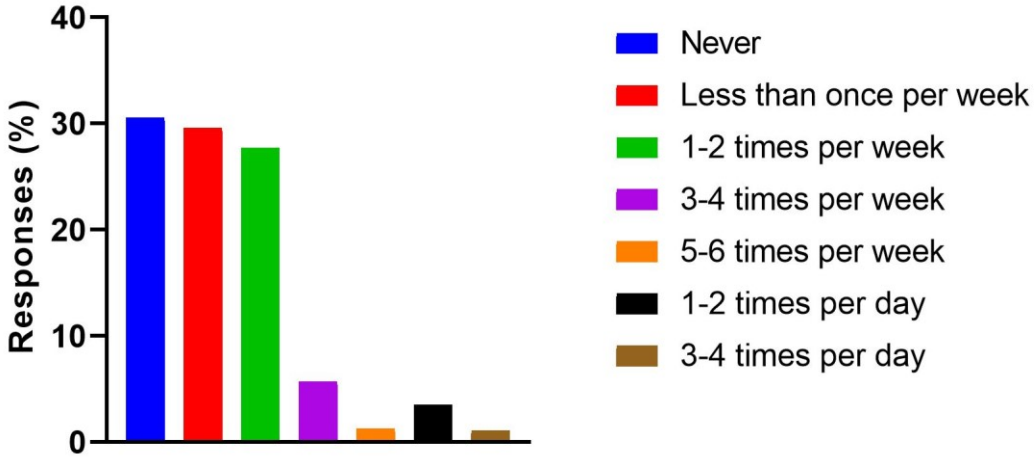

Figure 5. Responses (% of total) for frequency of food consumption from establishments located on the University of Northampton campus

Fruit and vegetable intake patterns are displayed in Figure 6 and Figure 7, respectively.

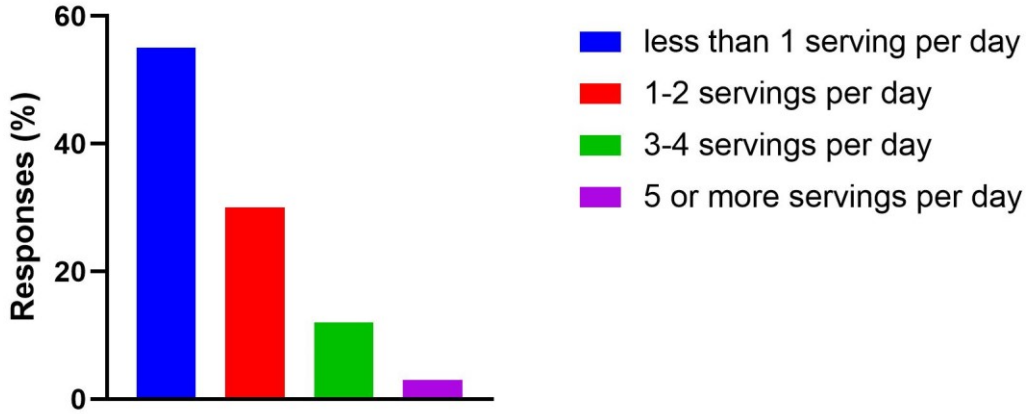

Figure 6. Responses (% of total) for frequency of fruit intake

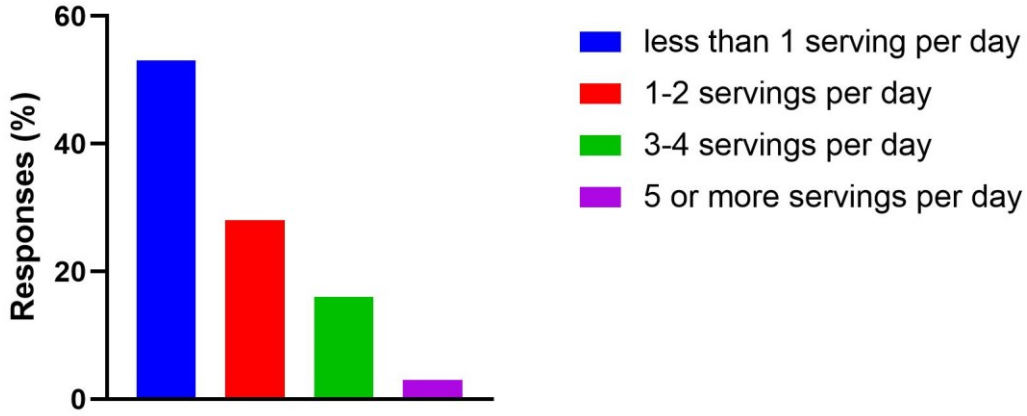

Figure 7. Responses (% of total) for frequency of vegetable intake

Breakfast consumption frequency is displayed in Figure 8. Respondents aged 18-34 ($p=0.005$), white students ($p<0.001$), undergraduates ($p<0.001$), and those living at home or in university accommodation ($p=0.002$) were most likely skip breakfast.

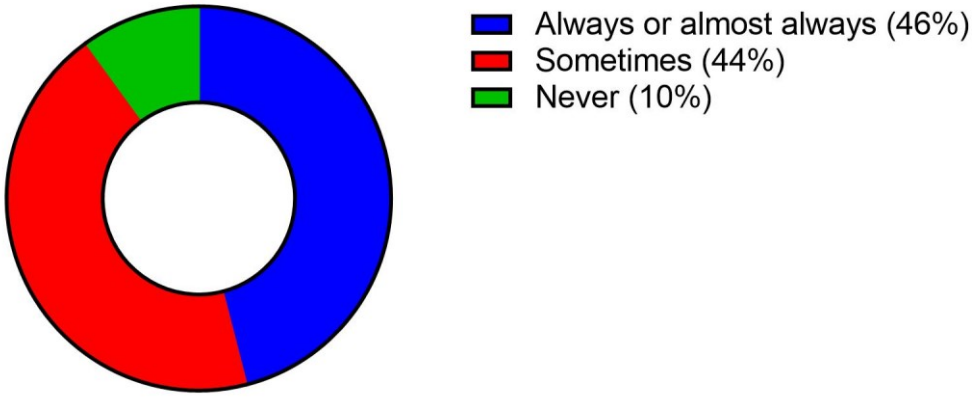

Figure 8. Responses (% of total) for frequency of breakfast consumption

Responses to the statement "I am able to afford the food, beverages and meals that I want to consume regularly" are displayed in Figure 9. There were significant differences in the responses between sex ($p=0.002$), ethnicity ($p<0.001$) and level of study ($p=0.009$) with males, non-white ethnicities and post-graduates reported a greater likelihood of being able to afford the things that they want to consume regularly.

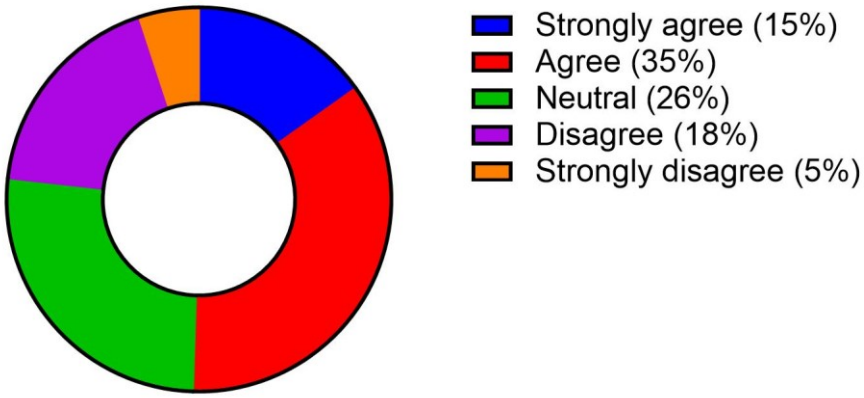

Figure 9. Responses (% of total) for the statement "I am able to afford the food, beverages and meals that I want to consume regularly"

When asked about barriers to healthy eating, the responses were as follows: "yes" 45% (n=268) and "no" 55% (n=322). The most cited barriers to healthy eating were cited as "food cost" (n=205), "lack of time" (n=119), and "stress" (n=112). Female (p=0.002), LGBTQ+ (p=0.009), white (p<0.001) and undergraduate (p=0.009) students were more likely to agree they experienced barriers to healthy eating.

Alcohol and Nicotine Consumption

When asked "how often do you have a drink containing alcohol?" participants responded: ≥2 times per week 8% (n=46), once per week 10% (n=57), less than once per week 41% (n=239), and never 42% (n=248). Responses to the question "How often do you consume 8 or more units of alcohol on one occasion?" are displayed in Figure 10. There were no significant differences between groups for frequency of alcohol consumption.

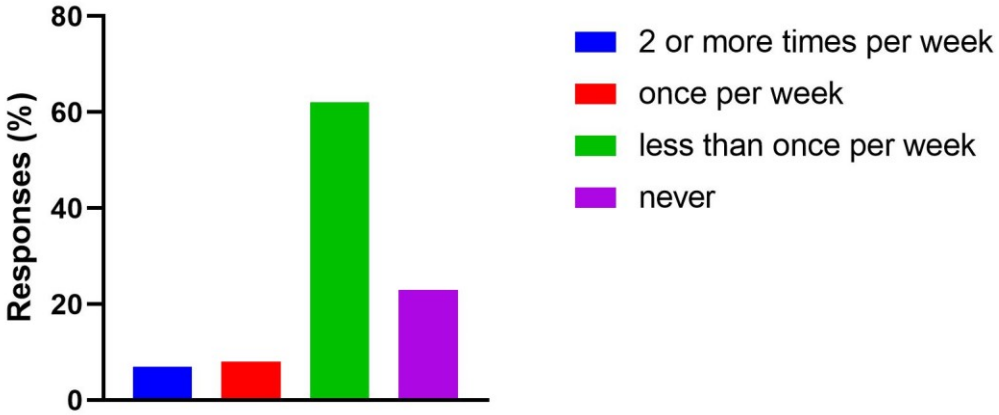

Figure 10. Responses (% of total) to the question "How often do you consume 8 or more units of alcohol on one occasion?"

Responses to the question “How often do you consume any nicotine containing products?” are displayed in Figure 11. Reported nicotine intake was significantly greater in LGBTQ+ students ($p<0.001$).

Figure 10. Responses (% of total) to the question “How often do you consume any nicotine containing products?”

Recommendations

Based on this study, there are several recommendations for internal staff as well as wider stakeholders working within higher education with an interest in student health and well-being. These are:

- Greater provision of support by the university to students to facilitate healthier eating patterns, particularly considering the current cost of living crisis
- Greater consideration for the dietary offerings to students by the University of Northampton given the low use of on-campus establishments for acquiring food and beverages
- Awareness of PA guidelines was low in this population. Targeted education strategies to the student population *may* improve awareness and adherence to guidelines.
- Provision of PA in universities should be diverse, and not reliant on sport-centred opportunities. Further research and university management attention is required to understand provision of PA opportunities that may have a wider appeal.
- Money, time, and stress are external factors that have an influence on university students PA and sedentary behaviours. Potential interventions to alleviate these barriers would likely promote increased PA and reduced sedentary time amongst student populations.
- Sitting time is likely elevated in university student populations. University management and staff should seek to address this with potential interventions being greater provision of standing desks within student study areas as well as academic staff integrating movement and regular breaks into lecture schedules.

- The student population is not homogenous in experiences with PA, dietary habits, and consumption of nicotine and alcohol; thus, stakeholders should work with student populations to understand unique challenges and needs, with consideration for sex, sexual orientation, ethnicity, age, and level of study. More research is needed to better understand these differences and contextual factors surrounding these.

Strengths and Limitations

Notable strengths from this study are the large and representative sample, the use of validated measures to construct the survey, and that the survey underwent face validity through the running of focus groups with a diverse range of students.

We acknowledge the limitations of the study, which include the potential for self-report inaccuracies and social desirability bias that may prevent respondents from answering honestly. We were unable to collect response rate information for this study. We are unable to determine the "why" from this data and it provides only a cross-sectional snapshot of the variables reported in this summary document. However, this sets up future research using a range of qualitative and quantitative methodologies to better understand the findings from this study.

Methods

Sampling strategy

A convenience sampling strategy was used. To be eligible for inclusion for this study, individuals were required to be a student currently enrolled at the university, with no exclusion criteria against year of study, level, or programme. Email invitations to participate in the study were sent on behalf of the researchers by administrative staff at the university. All programme leaders across the institution were contacted and permission granted to post an announcement on their course page within the virtual learning environment which would have students from all levels of study enrolled on. Upon completion, participants could enter a prize draw for two £100 supermarket vouchers. Ethical approval was granted at faculty level prior to survey distribution (HREC Code: 212214).

Survey design and development

The survey was developed by the research team and used a range of validated single and multi-item scales (detailed throughout methods), as well as non-validated specific questions based on previous literature in the areas of interest. During the development phase of the survey, we established

face validity by running four focus group workshops with 24 students (six in each group) whereby students completed the survey and feedback was gained to refine each question and ensure student input to matters important to them. We trialled a range of measures and gained student feedback on ease of interpretation, likelihood to respond and validity of expressing their views on each topic.

In the first section of the survey broader demographic questions were included to enable analysis of associations of reported behaviours with demographic factors. These included age, gender, sexuality, ethnicity, year of study, programme of study and current living situation.

Self-reported health and wellbeing

General health was assessed through a single-item self-rated health quality measure (Bowling, 2005). The measure included the questions “In general, how would you rate your physical health?” and “In general, how would you rate your mental health?” were measured using a 5-point Likert scale (Very Good, Good, Fair, Poor and Very Poor). This single item measure has been shown to be of comparable validity to multi-item health-oriented questions (Ahmad et al., 2014), and was favoured due to its ease in administration and reduction in time to complete the survey. Students were also asked to state to what extent they agree with the following statement “"I feel part of the student community and have a sense of social connection to the university" with responses on a 5-point Likert scale.

Physical activity

Current PA levels was assessed with a single item, that is, “‘In the past week, on how many days have you done a total of 30 min or more of physical activity, which was enough to raise your breathing rate? This may include sport, exercise and brisk walking or cycling for recreation or to get to and from places but should not include housework or physical activity that is part of your job” (Milton, Clemes, & Bull, 2013). The scale has demonstrated good validity in comparison to accelerometers (Wanner et al., 2014). For the single-item measure, those reporting zero days of activity were classified as ‘inactive’, those reporting between 1 and 4 days were considered ‘fairly active’, and those reporting ≥5 days or more were considered ‘active’ (Milton et al., 2017). These reporting categories are recommended by Sport England (Sport England, 2023), who manage the surveillance of physical activity across England.

The UK guidelines on PA for adults also recommends people engage in exercises to increase muscle strength and endurance on at least ≥2 days per week. We therefore asked participants, “‘How many days per week, on average, do you engage in exercises to increase muscle strength and endurance (e.g lifting weights, doing push-ups, using exercise machines)?’”.

Respondents were also asked questions on their awareness of UK government guidelines for physical activity, confidence in their achievement of the guidelines, perceived barriers to physical activity, changes in physical activity behaviours since attending university, and engagement with physical activity provision at the university.

Sedentary behaviours

Sedentary behaviour is defined as "Any waking behaviour characterized by an energy expenditure ≤1.5 metabolic equivalents (METs), while in a sitting, reclining or lying posture" (Tremblay et al, 2017). We used self-reported sitting time as a proxy measure for sedentary behaviour which was obtained from a single-item measurement which has shown evidence of reliability and validity (McLaughlin et al., 2020). The 7th item on the International Physical Activity Questionnaire-Short Form (IPAQ-SF) was used which measures the duration (minutes per day) of time spent sitting on a usual weekday. This measure has demonstrated low-moderate correlations with accelerometer-derived sedentary time (Healy et al, 2011). This includes time spent sitting at a desk, visiting friends, or reading, or sitting or lying down while watching television across various contexts including work, home, or leisure.

Dietary habits

Dietary habits were assessed using questions modelled on the food-frequency questionnaire (FFQ) to identify general trends in eating habits. Internal reliability and test-retest reliability of the questions have previously been demonstrated in adolescents (Turconi et al, 2003).

Additional questions were included to explore dietary habits specific to the population by enquiring about consumption of food and beverages from establishments located on the University of Northampton campus, meal consumption, and perceived barriers to healthy eating.

Alcohol and nicotine consumption

Alcohol consumption was assessed using two questions: "How often do you have a drink containing alcohol?" and "How often do you consume 8 or more units of alcohol on one occasion (e.g 1 unit is equivalent to ½ pint regular strength beer or cider, 1 regular 25ml shot spirits, 1 small glass of wine)?"

Nicotine consumption was estimated using a single question "How often do you consume any nicotine containing products? E.g cigarettes, electronic cigarettes (vapes)?".

Statistical Analysis

Quantitative data were analysed using IBM SPSS Statistics for Windows (Version 28, IBM Corp., Armonk, NY, USA). Descriptive statistics were used to summarise the distributions of the responses to the questions. Numerical responses were summarised with mean ± standard deviation and median ± inter-quartile range if the responses were parametric and non-parametric, respectively. Categorical responses were summarised using counts and percentages. The analysed responses were summarised for all respondents and then compared across six identified demographical variables: age group, gender, sexual orientation, ethnicity, level of study and living situation.

Parametric data were compared across demographic groups using independent group t-tests for comparison of 2 variables or one-way analysis of variance for more than two comparisons. Non-parametric data were analysed using median tests, with Bonferroni corrections for multiple comparisons. Chi-squared tests were used to compare the distribution of categorical responses to the question across the demographic variables. All statistical tests were conducted using a two-sided significance level of 5% ($p<.05$).

Acknowledgements

The authors would like to acknowledge contributions from the students who participated in the focus groups, all participants who completed the final survey, and all staff within the University of Northampton who assisted with the distribution and promotion of the survey.

Dataset

The dataset for this project can be accessed at: 10.24339/ed0d11de-790a-4b58-b523-8421c3eb8eeb

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