

Self Reported Metabolic Disease Across the Adult Life Course in Palestine: Associations With Dietary Preferences, Lifestyle Behaviors, and Depressive Symptoms in an Online Cross Sectional Survey

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Abstract

Background

Metabolic conditions are increasing in low resource settings, yet evidence linking age, dietary behaviors, lifestyle factors, and depressive symptoms in Palestine is limited. This cross sectional study aimed to evaluate dietary behaviors, lifestyle risk factors, and self reported metabolic diseases in Palestine.

Methods

An online questionnaire recruited Palestinian residents aged 18 years or older through nonprobability snowball sampling from 9 to 17 June 2026. Metabolic conditions included hypertension, diabetes, dyslipidemia, or insulin resistance. Depressive symptoms were assessed using the CES D 10. Multivariable logistic regression evaluated independent correlates.

Results

Among 847 participants, age was 33.58 years; 85.0% were female, and 80.6% were university educated. The prevalence of any metabolic disease was 16.1%. Hypertension, diabetes, insulin resistance, and dyslipidemia were reported by 6.5%, 5.5%, 5.4%, and 3.3%, respectively. Among 703 with valid CES D 10 totals, 62.4% screened positive. Prevalence rose from 5.9% at ages 18 to 24 to 46.2% at 55 years or older. Each ten year age increase was associated with higher odds (AOR 2.16; 95% CI 1.81 to 2.57). Preference for hot or spicy foods was also independently associated (AOR 2.14; 95% CI 1.30 to 3.52).

Conclusions

Advancing age was the dominant correlate of self reported metabolic disease. The spicy food association is hypothesis generating because preference rather than intake was measured. Earlier risk assessment, grounded nutrition education, and mental health support should be evaluated in resource constrained Palestinian settings.

Introduction

Noncommunicable diseases are a leading cause of premature mortality worldwide and place pressure on health systems. Metabolic diseases, including type 2 diabetes, obesity, hypertension, dyslipidemia, and cardiovascular disorders, are major health problems throughout the world. These conditions reflect disturbances in glucose regulation, lipid metabolism, vascular function, inflammation, and body composition. Their burden is concentrated in low and middle income countries where prevention, diagnosis, and continuity of care may be constrained [1]. Palestinian surveillance documents substantial

exposure to tobacco smoke, inadequate fruit and vegetable intake, excess weight, raised blood glucose, raised blood pressure, and physical inactivity [2].

Our habits, lifestyle, and the things we do every day can influence whether metabolic diseases develop. What we eat, how much we exercise, whether we smoke or drink alcohol, and how much time we spend sitting are behaviors that may modify risk. Eating large amounts of fats, sugary foods, and processed foods may increase risk whereas vegetables, fruits, whole grains, and healthy fats may help reduce it. Exercising regularly can help the body regulate and use insulin more effectively and may reduce obesity and cardiovascular risk. Guidance, therefore, emphasizes regular aerobic and muscle strengthening activity with less sedentary time [3]. Prospective evidence associates plant centered diets with lower metabolic syndrome incidence while ultraprocessed food consumption is linked with greater risk [4, 5].

Age is central because physiological reserve, body composition, insulin sensitivity, and vascular function change over time. At different ages, these behaviors can affect people differently. If unhealthy patterns begin when people are young, they can contribute to major health problems later in life. Older people experience physiological changes that can make metabolic diseases more likely. Psychological health may intersect with metabolic pathways through appetite, sleep, activity, inflammation, and treatment adherence. A systematic review identified a bidirectional association between depressive symptoms and metabolic syndrome, although estimates varied across populations and measurements [6].

Palestinian evidence remains limited and depends on the population studied and outcome definition. A northern West Bank study reported a considerable burden of clinically defined metabolic syndrome, especially with advancing age and excess weight [7]. These estimates cannot be equated with self reported diagnoses, but they establish the importance of local surveillance. Interpretation must account for fragmented healthcare delivery, constrained resources, and uneven access across geographic and administrative boundaries [8]. Occupation related movement restrictions, attacks on health care, disrupted referrals, and economic hardship may reduce access to screening, medicines, and follow up [9].

Few studies have compared dietary behaviors and health risks across age groups within the Palestinian population. Understanding how behaviors change across age groups is important for designing plans to prevent disease and protect health. Accordingly, this study estimated self reported diabetes, hypertension, dyslipidemia, or insulin resistance among Palestinian adults and evaluated sociodemographic, dietary, behavioral, and psychological correlates. It also described how depressive symptoms, activity frequency, sleep, and the number of reported metabolic conditions varied by sex and age group. Integrating these domains was intended to identify locally relevant prevention signals while avoiding causal interpretation of cross sectional associations.

Methodology

Study design and setting

We conducted a cross sectional online questionnaire study among adults residing in Palestine from 9 to 17 June 2026. The structured self administered survey assessed dietary behaviors, lifestyle factors, depressive symptoms, and self reported metabolic conditions across age groups. Recruitment used nonprobability convenience sampling followed by snowball sharing through social media and direct electronic distribution. This approach enabled rapid participation across dispersed communities, but provided no population sampling frame and may have favored younger, female, educated, or digitally connected respondents. Reporting followed the Strengthening the Reporting of Observational Studies in Epidemiology guidance [10].

Participants and sample size

Eligible participants were Palestinian residents aged 18 years or older who could read the questionnaire and provide electronic informed consent. Participation was voluntary. Responses were analyzed when the age criterion and demographic and outcome requirements were met. The final dataset contained 847 participants. Because the number receiving the link was unknown, a response rate could not be calculated. The sample exceeded the conventional minimum of 384 for 95% confidence, 5% precision, and 50% assumed prevalence, although this calculation did not overcome nonprobability recruitment.

Questionnaire development and adaptation

The questionnaire used in this study was not developed de novo as an entirely novel instrument. It was an adapted survey assembled from previously published sources. The principal sociodemographic, chronic disease, dietary, tobacco, and health-behavior domains were adapted from the population study by Pengpid and Peltzer [11]. Physical activity questions were based on the vigorous, moderate, and walking domains of the International Physical Activity Questionnaire short form [12], while depressive symptoms were assessed using the 10-item Center for Epidemiologic Studies Depression Scale [13]. The adapted instrument also included sleep, secondhand smoke, alcohol use, dietary pattern, and food-preference items relevant to the present study. The research team translated the survey into Arabic, a language reviewer assessed semantic equivalence, and subject experts reviewed relevance and cultural clarity before dissemination. Because minutes per day were not collected for physical activity, metabolic equivalent minutes were not calculated.

Outcome definitions and scoring

The primary outcome was any self reported metabolic disease defined as diabetes, hypertension, dyslipidemia or lipid disorder, or insulin resistance. Separate indicators described individual conditions, obesity, and thyroid disease. A disease count summed the four primary conditions. Obesity remained outside the composite because height and weight were not collected and body mass index could not be calculated. Smoking was classified as current, former, or never, and current smoking was binary.

Secondhand smoke and alcohol use in the previous year were binary. Sleep was analyzed continuously and in three categories below six, six to eight, and above eight hours.

Activity depression and dietary variables

Vigorous, moderate, and walking frequencies each received zero to three points giving an activity score from zero to nine. Scores were categorized as low from zero to two, moderate from three to five, or high from six to nine. This was not an official questionnaire score. Depressive symptoms used the ten item Center for Epidemiologic Studies Depression Scale [13]. Items were scored zero to three with hopefulness and happiness reverse scored. Totals ranged from zero to 30 and at least 10 indicated elevated symptoms. One missing or uncertain item was imputed using the respondent mean, while totals were omitted when two or more items were unavailable. Cronbach alpha was 0.835. Food preferences covered salty, sweet, spicy or hot, oily or fatty, and no preference. Diet was balanced, plant based, or meat based.

Statistical analysis

Responses were exported to Microsoft Excel and analyzed using Python 3.11 with pandas, SciPy, and statsmodels. Means, standard deviations, medians, counts, and percentages summarized data. Pearson chi square or Fisher exact tests assessed categorical associations. Relative risks, confidence intervals, and Cramer V were reported. Welch t tests compared sex groups and one way analysis of variance compared age groups with Cohen d and eta squared. Spearman coefficients assessed correlations. Complete case logistic regression included age, sex, residence, education, income, smoking, secondhand smoke, alcohol, short sleep, activity, depressive symptoms, food preferences, and diet. Adjusted odds ratios and confidence intervals were reported. Tests were two sided, and P below 0.05 was significant. Fit used the likelihood ratio test, McFadden pseudo R squared, and event count.

Ethical considerations

The Al Quds University Research Ethics Committee formally approved the protocol, questionnaire, and electronic consent process. The study followed the Declaration of Helsinki. Participants received information about purpose, voluntariness, anonymity, and withdrawal before form submission. Electronic consent was required and no direct identifiers were collected.

Results

Participant characteristics

Responses were recorded from 9 to 17 June 2026. The analysis included 847 participants. Mean age was 33.58 ± 14.40 years, and median age was 29 with an interquartile range of 20 to 45. Adults aged 18

to 24 years formed the largest group with 355 (41.9%), followed by ages 35 to 44 with 138 (16.3%), ages 45 to 54 with 135 (15.9%), ages 25 to 34 with 128 (15.1%), and ages 55 years or older with 91 (10.7%). Participants were predominantly female, 720 (85.0%), married, 432 (51.0%), and university educated, 683 (80.6%). Villages accounted for 424 (50.1%) and cities for 384 (45.3%). Paid employment was reported by 381 (45.0%) and student status by 288 (34.0%). Table 1 summarizes demographic, behavioral, dietary, and health characteristics.

Behavioral and depressive symptom profile

Current smoking was reported by 64 participants (7.6%), secondhand smoke exposure by 520 (61.4%), and alcohol use during the previous year by 31 (3.7%). Mean sleep duration was 6.78 ± 1.77 hours and 187 (22.1%) slept less than six hours. The activity frequency score averaged 2.63 ± 2.11 , with low frequency among 430 (50.8%), moderate frequency among 315 (37.2%), and high frequency among 102 (12.0%). Most participants reported a balanced diet, 750 (88.5%), while 56 (6.6%) reported a plant based diet and 41 (4.8%) a meat based diet. Scorable CES D 10 totals were available for 703 participants. The overall mean score was 11.65 ± 5.97 and 439 of 703 (62.4%) met the threshold for elevated symptoms. Frequent high risk responses included everything requiring effort in 357 (42.1%); disturbed sleep in 352 (41.6%); infrequent happiness in 299 (35.3%); and infrequent hopefulness in 275 (32.5%). Table 2 presents all item responses and scoring results.

Reported metabolic and related conditions

Any self reported metabolic disease was present in 136 participants (16.1%). Hypertension was reported by 55 (6.5%), diabetes by 47 (5.5%), insulin resistance by 46 (5.4%), and dyslipidemia by 28 (3.3%) with overlap permitted. Multiple conditions could be reported by the same participant. Self reported obesity occurred in 74 (8.7%) and thyroid disease in 38 (4.5%). An exploratory definition that added obesity identified 188 participants (22.2%). Obesity was excluded from the primary composite because measured height and weight were unavailable. Figure 1 displays condition prevalence with 95% confidence intervals.

Sociodemographic associations

Metabolic disease prevalence increased from 5.9% among adults aged 18 to 24 years to 46.2% among those aged 55 years or older ($P < 0.001$; Cramer V = 0.373). Relative to the youngest group, crude relative risk was 5.38 (95% CI 3.32 to 8.73) at ages 45 to 54, and 7.80 (95% CI 4.87 to 12.49) at age 55 years or older. Figure 2 shows this age gradient. Married participants had higher prevalence than single participants at 23.1% versus 7.8% (crude RR 2.99; 95% CI 2.03 to 4.39; $P < 0.001$). Retired participants had the highest employment category prevalence at 45.5% compared with 5.9% among students (crude RR 7.70; 95% CI 4.02 to 14.75; $P < 0.001$). Sex, residence, education, and income were not significantly associated. Table 3 reports all sociodemographic comparisons.

Lifestyle dietary and psychological associations

Sleep category was associated with metabolic disease in bivariate testing ($P = 0.021$). Prevalence was lowest among participants reporting more than eight hours at 7.3% compared with 16.7% among those reporting six to eight hours (crude RR 0.44; 95% CI 0.22 to 0.88). Low activity frequency showed higher prevalence than high frequency at 18.4% versus 11.8% but the overall comparison was not significant ($P = 0.147$). Spicy or hot food preference corresponded to prevalence of 20.0% versus 14.4% (crude RR 1.39; 95% CI 1.01 to 1.90; $P = 0.043$). Smoking, secondhand smoke, alcohol, overall diet, salty, sweet, oily or fatty preferences, and elevated depressive symptoms were not significant. Table 4 provides denominators, estimates, and effect sizes.

Continuous outcomes and correlations

Males were older than females at 39.46 ± 15.91 versus 32.54 ± 13.87 years ($P < 0.001$; Cohen $d = 0.49$) and had higher activity frequency scores at 3.36 ± 2.27 versus 2.50 ± 2.05 ($P < 0.001$; $d = 0.42$). Females had higher CES D 10 scores at 12.07 ± 5.92 versus 9.25 ± 5.66 ($P < 0.001$; $d = -0.48$ for the male minus female contrast). Across age groups, mean CES D 10 scores declined from 13.24 ± 5.57 to 9.15 ± 5.74 ($P < 0.001$; eta squared = 0.082) while metabolic disease count increased ($P < 0.001$; eta squared = 0.132). Mean sleep also declined across age groups ($P = 0.002$; eta squared = 0.020). Table 5 summarizes all continuous comparisons. Age correlated inversely with CES D 10 score (Spearman $\rho = -0.273$; $P < 0.001$) and positively with disease count ($\rho = 0.331$; $P < 0.001$). Figure 3 illustrates age and depressive symptom burden by metabolic disease status. These results do not establish causality.

Multivariable analysis

The complete case logistic regression included 703 participants and 118 events. The likelihood ratio test was significant ($P < 0.001$) and McFadden pseudo R squared was 0.182. Each ten year increase in age was associated with higher odds of metabolic disease (adjusted OR 2.16; 95% CI 1.81 to 2.57; $P < 0.001$). Spicy or hot preference was also associated (adjusted OR 2.14; 95% CI 1.30 to 3.52; $P = 0.003$). Meat based diet had an adjusted OR of 2.28 but was not significant ($P = 0.073$). Elevated depressive symptoms, smoking, secondhand smoke, activity, sex, residence, education, income, alcohol, short sleep, other preferences, and plant based diet were also not independently associated. Table 6 presents every adjusted estimate. Because the model estimated 18 terms from 118 events, the adjusted results require cautious interpretation.

Discussion

The present study examined sociodemographic characteristics, lifestyle behaviors, dietary preferences, depressive symptoms, and self reported metabolic disorders among Palestinian adults. Two principal findings emerged. Advancing age was the strongest independent correlate of metabolic disease. Among the lifestyle and dietary variables examined, only preference for spicy or hot foods remained independently associated after adjustment. Despite the high prevalence of depressive symptoms and limited physical activity, neither was an independent predictor in the final model. Any metabolic disease was reported by approximately one in six participants and prevalence rose sharply across age groups.

These findings identify locally relevant patterns while emphasizing that a selected online cross sectional sample cannot establish incidence, causality, or national prevalence.

The strong relationship between age and metabolic illness was anticipated, yet clinically important. As individuals grow older, cumulative exposure to metabolic stressors and age related physiological changes may contribute to diabetes, hypertension, dyslipidemia, and insulin resistance. This age gradient indicates that preventive attention should begin early in adulthood before metabolic abnormalities become established. Age also structures marital status, retirement, healthcare contact, and the opportunity to receive and recall a diagnosis, which helps explain large crude differences across those categories. The adjusted model retained a pronounced age association but residual confounding remains possible. The result should therefore be interpreted as an age related prevalence pattern rather than proof that aging alone caused disease.

A noteworthy finding was the independent association between preference for spicy or hot foods and metabolic illness. Because the present study was cross sectional, no causal relationship can be inferred. Preference may reflect broader eating behaviors rather than spices themselves. It could capture meal composition, sodium, oils, portions, cultural taste, or dietary change. Reverse causation is plausible if participants with established conditions modified what they preferred or reported. The study also contributes by examining behavioral, psychological, and metabolic domains together in an under researched setting. Palestinian estimates based on clinically defined metabolic syndrome are not equivalent to this self reported composite [14]. Self reported diabetes may also miss undiagnosed disease, which limits direct prevalence comparison [15].

Our findings are generally consistent with previous studies examining metabolic risk factors across adult age groups. The questionnaire was adapted from the Indonesian population study by Pengpid and Peltzer, which used household sampling and measured body mass index [11]. Both studies identified age as an important marker of adverse nutritional or metabolic outcomes. However, the Indonesian analysis classified measured underweight and overweight whereas our outcome combined four reported diagnoses. Recruitment scale, sampling frame, measurement method, and population structure also differed substantially. Spicy food preference was not a central exposure in the source study. Agreement on the age gradient therefore supports a broad life course pattern but does not make the prevalence estimates or dietary associations interchangeable.

Palestinian and neighboring evidence provides context. A study among overweight and obese adults in Palestinian refugee camps reported a high metabolic syndrome burden under formal diagnostic criteria [16]. A Jordanian national survey likewise demonstrated increasing prevalence with age and meaningful sociodemographic patterning [17]. Previous studies have consistently reported that aging is associated with progressive metabolic changes, reduced insulin sensitivity, and cumulative exposure to unhealthy lifestyle factors. Our lower composite prevalence is unsurprising because the sample was younger, predominantly female, highly educated, and recruited online. The outcome also depended on previous diagnosis and recall rather than examination, laboratory testing, or standardized waist measurement.

These differences reinforce the age signal, but make percentages from distinct constructs nonequivalent.

International evidence helps interpret these correlates. The Norwegian HUNT study documented a steep age increase in clinically defined metabolic syndrome [18]. An interesting finding in our study was the significant association between preference for spicy or hot foods and metabolic disease. Evidence on spicy food is inconsistent. A Chinese meta analysis associated higher intake with greater odds of overweight or obesity but lower odds of hypertension [19]. A diabetes cohort suggested possible cardiovascular benefit from spicy food [20]. Differences in exposure measurement, food preparation, accompanying dishes, socioeconomic context, and selected outcomes may explain the divergence. Our preference item cannot identify biological effects and should prompt better dietary assessment rather than avoidance advice in this setting.

The findings must be interpreted within the Palestinian context. Palestinian healthcare operates across fragmented jurisdictions with constrained financing and recurrent disruption to travel, referrals, medicines, and continuity [8, 9]. Occupation related restrictions may hinder routine screening and follow up even when awareness is adequate. Economic pressure can shape food affordability, activity opportunities, and appointment access. These conditions highlight the importance of considering local context when interpreting metabolic disease risk factors. They were not measured directly in this survey and should not be assumed to explain individual responses. Nevertheless, feasible prevention requires services that can function despite mobility barriers, resource limitations, and uneven primary care access rather than relying only on individual behavior change.

The study identified an important mental health burden within the surveyed population. More than 60% of participants with valid CES D 10 scores screened positive, with fatigue, disturbed sleep, reduced happiness, and hopefulness commonly reported. Despite this high burden, depressive symptoms were not independently associated with metabolic illness after adjustment. This null result does not make psychological distress irrelevant because effects may operate through sleep, appetite, activity, inflammation, or adherence. Several lifestyle factors including physical inactivity, smoking, secondhand smoke exposure, sleep duration, and overall dietary pattern were not independently associated after adjustment. Sleep evidence is heterogeneous and often nonlinear across populations [21]. Earlier Palestinian work linked obesity with major comorbidities using direct anthropometric assessment [22].

The findings have important implications for public health and clinical practice in Palestine. Age based opportunities for blood pressure, glucose, lipid, and weight assessment could be strengthened in primary care while avoiding assumptions that younger adults are risk free. The Iranian national metabolic syndrome survey illustrates how standardized clinical measurements can reveal age and sex patterns that self report cannot capture [23]. Clinicians should ask about overall meals, preparation methods, sodium, fats, portions, sleep, activity, and mental health rather than interpreting one food preference in isolation. Community programs could combine cardiometabolic screening with brief counseling and

referral pathways. Such strategies should be evaluated for feasibility, acceptability, equity, and clinical benefit before broad implementation.

The independent association with spicy or hot foods suggests that dietary assessment should extend beyond individual food items to broader dietary patterns and cultural eating behaviors. Gaza research linked dietary patterns with metabolic syndrome among adults with type 2 diabetes, although that clinical population differs from our sample [24]. Culturally appropriate nutritional interventions should promote healthier overall dietary habits rather than focusing on specific foods in isolation. Education can use primary care, universities, community organizations, credible social media, and accessible Arabic materials. Messages should emphasize affordable substitutions, portions, labels, and feasible activity. The World Health Organization package of essential noncommunicable disease interventions offers a framework for integrating risk assessment, counseling, and treatment in primary care [25].

A major strength is the multidimensional questionnaire covering demographic, behavioral, dietary, psychological, and metabolic domains across age groups. Use of the CES D 10 and structured activity domains supports comparison with previous research. Online distribution reached participants from different communities at relatively low cost. Other strengths include transparent definitions, denominators, effect sizes, and nonsignificant adjusted estimates. However, several limitations should be considered. Self report permits recall and social desirability bias, while the cross sectional design prevents causal inference. Snowball sampling may underrepresent men, older adults, refugees, rural communities, and people with limited digital access. Food preferences lacked frequency, quantity, preparation, and nutrient intake. The modified depression format, imputation, missing totals, and model complexity may affect comparability, precision, and stability. Residual confounding and limited national generalizability remain important.

The present findings provide several avenues for future research. Prospective longitudinal studies are needed to establish temporal relationships between dietary habits, lifestyle behaviors, depressive symptoms, and metabolic disease. Future studies should add objective body mass index, waist circumference, blood pressure, glucose, glycated hemoglobin, and lipid measurements. Probability based multicenter recruitment should better represent men, older adults, refugees, rural residents, and people with limited digital access. The spicy food association warrants examination of frequency, quantity, preparation methods, and the nutritional context of meals. Qualitative work could clarify this preference while interventions test integrated screening, nutrition, activity, and mental health pathways. The central message is not that one food preference causes disease but that metabolic risk increases markedly across adulthood and warrants earlier evidence based prevention supported by accessible continuous care.

Conclusion

Among surveyed Palestinian adults, self reported diabetes, hypertension, dyslipidemia, or insulin resistance affected approximately one in six participants and showed a pronounced age gradient. Age

remained the dominant independent correlate after adjustment, while preference for spicy or hot foods was also associated with the composite outcome. That dietary finding should be treated as hypothesis generating because the questionnaire measured preference rather than frequency, quantity, preparation method, or accompanying foods, and the cross sectional design cannot establish temporal direction or causality. Elevated depressive symptoms and low physical activity frequency were common concerns, even though neither was independently associated with metabolic disease in the adjusted model. The results support evaluation of earlier cardiometabolic risk assessment across adulthood together with culturally grounded dietary counseling, feasible physical activity promotion, and mental health awareness within primary care and community programs. Implementation should account for fragmented healthcare access, resource limitations, economic pressure, and occupation related barriers to continuity. National prevalence and causal conclusions require larger probability based or multicenter studies using objective anthropometric, blood pressure, glucose, glycated hemoglobin, and lipid measurements. Addressing metabolic risk before multimorbidity becomes established may offer a practical pathway to reduce preventable disease burden in Palestine.

Declarations

Ethics approval and consent to participate

The study protocol, questionnaire, and electronic consent procedure were approved by the Al Quds University Research Ethics Committee. All procedures were conducted in accordance with the Declaration of Helsinki. All participants provided electronic informed consent before completing the anonymous questionnaire.

Clinical trial number: not applicable.

Consent for publication

Not applicable.

Availability of data and materials

Deidentified data may be available from the corresponding author on reasonable request, subject to ethics approval, participant confidentiality, and institutional requirements.

Competing interests

The authors declare no competing interests.

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Author contributions

All authors contributed equally to study conception, questionnaire development, data collection, data interpretation, manuscript drafting, critical revision, and approval of the final version. All authors accept equal responsibility for the integrity and accuracy of the work.

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Tables

Tables 1 to 6 are available in the supplementary files section.

Figures

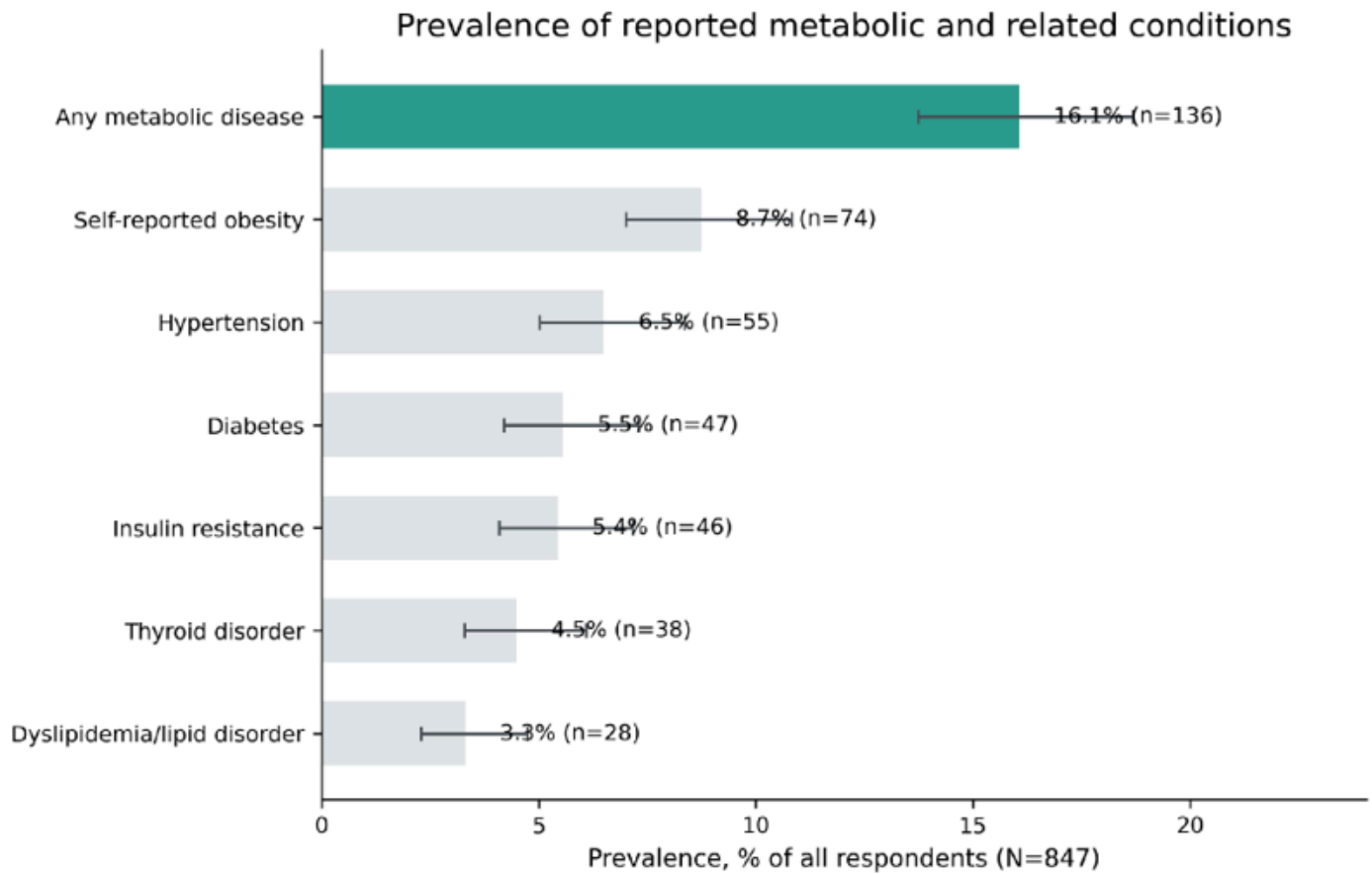


Figure 1

Prevalence of reported metabolic and related conditions among all participants. Bars show percentages of N = 847. Error bars represent Wilson 95% confidence intervals.

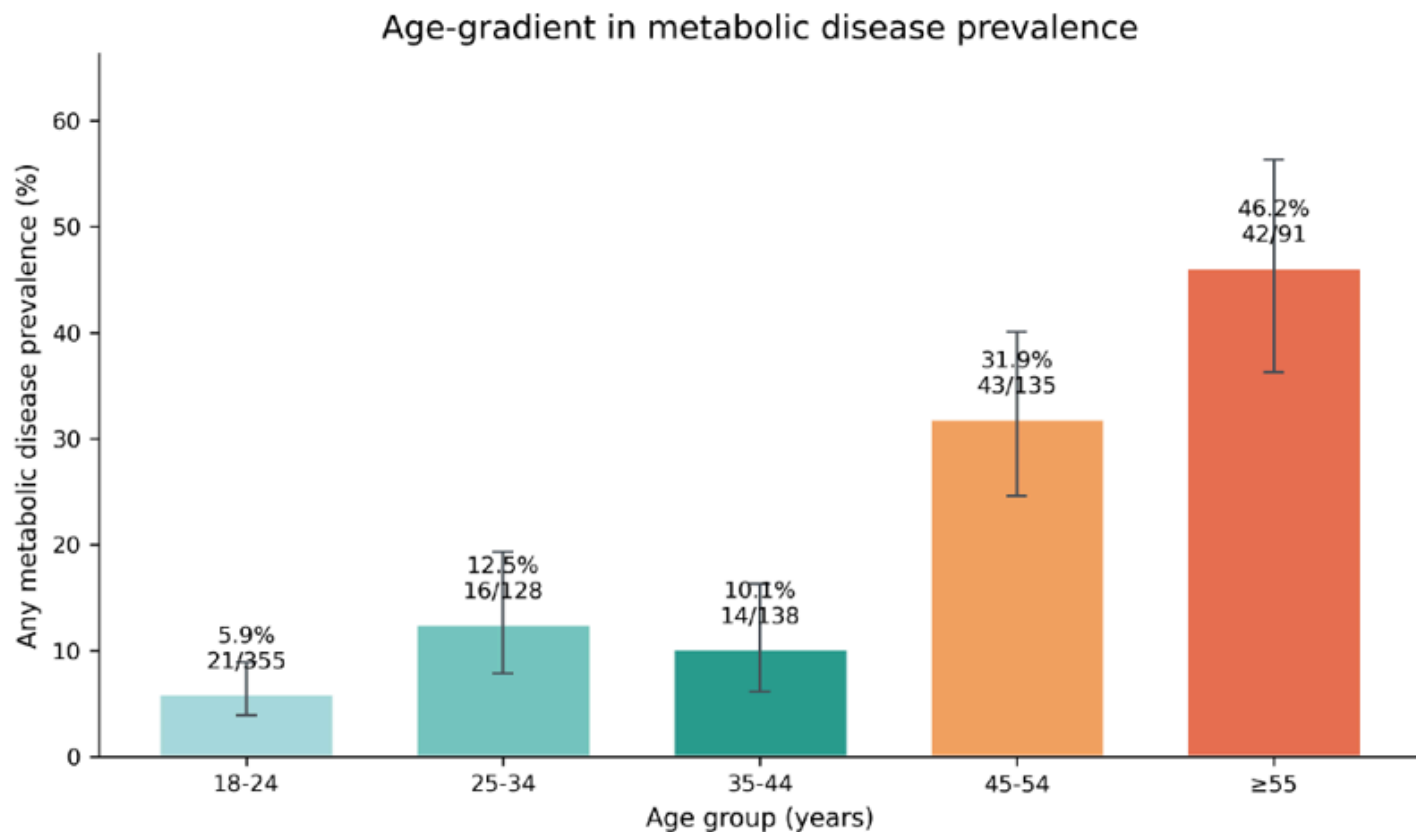


Figure 2

Age gradient in the prevalence of any self reported metabolic disease. Bars show within group prevalence. Error bars represent Wilson 95% confidence intervals.

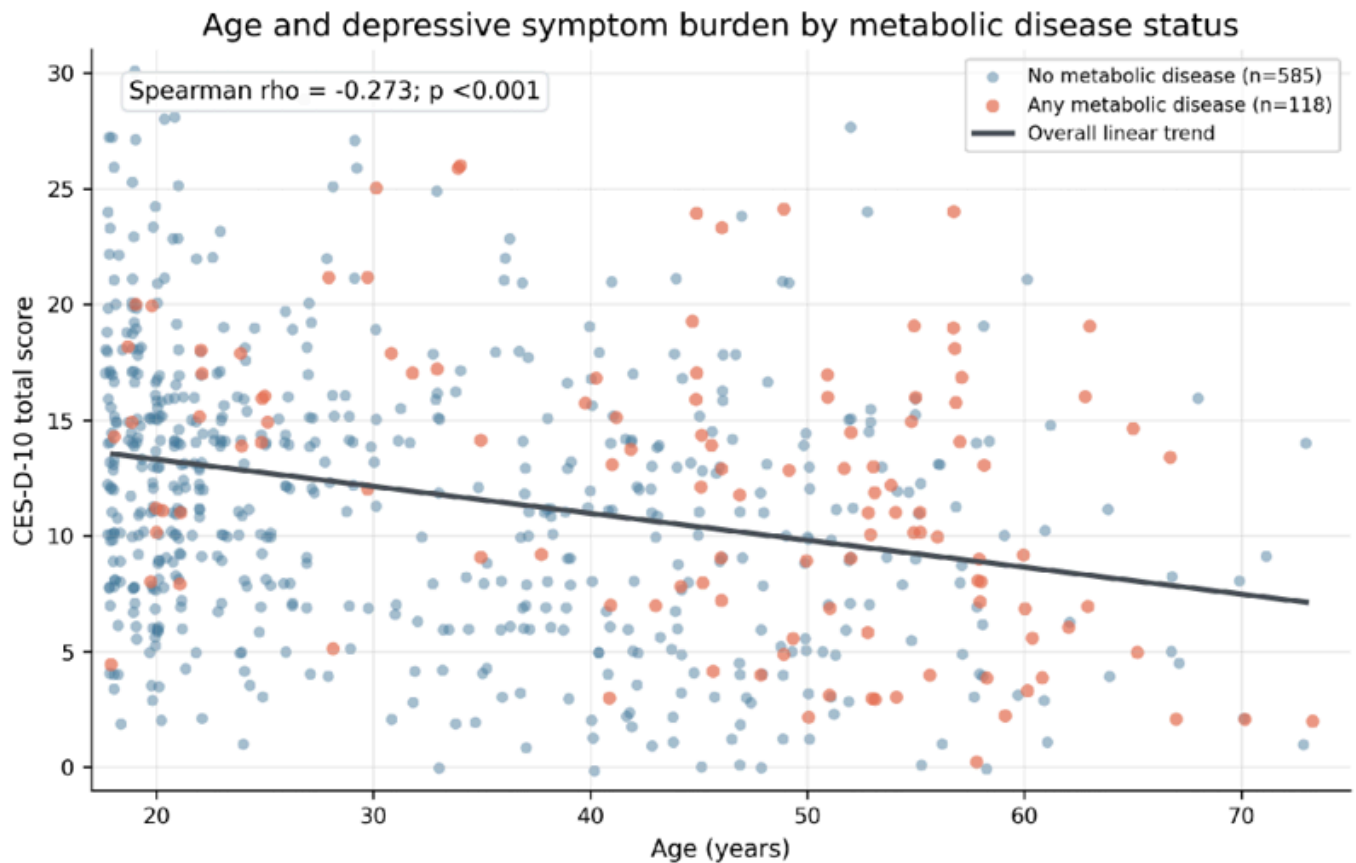


Figure 3

Age and CES D 10 depressive symptom burden by self reported metabolic disease status among 703 participants with scorable CES D 10 totals. Points are jittered for visibility, and the fitted line represents the overall linear trend.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [Tables61.docx](#)