



Health Profile of Teaching and Non-Teaching Personnel of the Schools Division Office of Pampanga: A Quantitative Cross-Sectional Study

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ARTICLE INFO

Keywords: Teaching Personnel, Non-Teaching Personnel, Health Profile, Cardiometabolic Indicators, Cross-Sectional Study.

Received : 17, July

Revised : 19, August

Accepted: 25, September

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ABSTRACT

This cross-sectional study assessed the health profile of teaching and non-teaching personnel of the Schools Division Office of Pampanga. It examined reported health conditions and behaviors, blood pressure, body mass index, fasting blood sugar, and lipid levels among 200 personnel during one assessment period. Questionnaire, physical measurement, and laboratory data were analyzed using Jamovi. The findings showed group differences in blood pressure and selected lipid indicators, while body mass index and fasting blood sugar showed no clear differences. Reported physical activity had weak associations with measured indicators, whereas reported hypertension and diabetes corresponded with their respective measurements. The approach demonstrates how combined health data can inform confidential follow-up and workplace health planning

INTRODUCTION

Health is an important concern for working adults, including personnel who support the delivery and administration of education. A person may report no diagnosed illness yet have an elevated blood pressure, fasting blood sugar, or lipid result. Conversely, a reported condition alone does not show the person's current measurements or health behaviors. These differences provide a practical reason to assess health through several sources of information rather than through self-report alone.

Noncommunicable diseases (NCDs), particularly cardiovascular disease and diabetes, provide a public health reason for this assessment. The World Health Organization (WHO, 2025a) identifies tobacco use, physical inactivity, harmful alcohol use, and unhealthy diets as NCD risk factors. Raised blood pressure, increased blood glucose, elevated blood lipids, and obesity are among the measurable indicators associated with these concerns. In the Philippines, NCDs accounted for an estimated 68% of deaths in 2021 (WHO, 2025b). These figures establish the wider importance of assessment, but they do not describe the health profile of a specific group of employees.

Teaching and non-teaching personnel of the Schools Division Office of Pampanga form a defined workplace population whose health characteristics can be examined directly. Both groups contribute to the functioning of the education system, although their duties and daily routines may differ. It would be inappropriate to assume that the two groups have the same health profile, or that one group has poorer health, without collecting and comparing data. The immediate reason for this study is therefore to establish what health conditions, behaviors, and measured indicators are present among the participating personnel.

The study will assess self-reported health conditions and behaviors, blood pressure, body mass index (BMI), fasting blood sugar (FBS), and lipid profile results. These measures bring together information about what participants know and report about their health with physical and biochemical findings obtained at the time of assessment. This approach is consistent with the WHO STEPwise framework, which uses questionnaires, physical measurements, and biochemical measurements to assess NCD risk factors (WHO, n.d.). A cross-sectional design will allow the researchers to describe these characteristics within a defined data collection period and compare selected indicators between teaching and non-teaching personnel.

The study's contribution to knowledge lies in its specific population and combined set of measures. Research on teachers elsewhere has used blood pressure, fasting glucose, and lipid results to examine cardiometabolic risk factors (Ratshilivha et al., 2025). The findings of that study cannot establish the profile of personnel in Pampanga, particularly when the population of interest includes non-teaching personnel as well. By documenting both groups within the Schools Division Office of Pampanga, the present study will produce evidence specific to its setting. It may show whether self-reported conditions and behaviors occur alongside measured findings and whether the distributions of selected indicators differ between personnel groups.

The results may help inform workplace health education, screening, and referral priorities based on the needs observed among participants. They may also provide baseline data for future research involving education personnel in similar settings. The study will describe health characteristics and identify possible associations; because it is cross-sectional, it will not establish that occupational role or any reported behavior caused a measured health outcome.

THEORITICAL REVIEW

Social Ecological Model

The Social Ecological Model explains health behavior through influences at several levels, including the individual, interpersonal relationships, organizations, communities, and public policy (McLeroy et al., 1988). For the present study, personal characteristics, health history, and behaviors represent individual factors. Personnel classification provides a limited description of the participants' organizational context. Teaching and non-teaching employees belong to the same education system, but their work responsibilities may differ. The model supports examining their health profiles without assuming that job classification itself causes a health outcome.

The study will measure personnel classification, selected personal characteristics, self-reported health conditions, and health behaviors. It will describe their associations with blood pressure, body mass index (BMI), fasting blood sugar (FBS), and lipid profile results. Because interpersonal, community, and policy influences are not measured, conclusions about those levels will not be drawn. The ecological model guides the choice of variables; it is not being tested in its entirety.

Ratshilivha et al. (2025) examined cardiometabolic risk factors among public school teachers in South Africa using physical and biochemical indicators, including blood pressure, fasting glucose, and lipid measurements. Their findings demonstrate the relevance of assessing these indicators in education personnel. However, the study did not compare teaching and non-teaching personnel of the Schools Division Office of Pampanga. A local comparison therefore remains an empirical question.

H1: Selected health profile indicators differ significantly between teaching and non-teaching personnel of the Schools Division Office of Pampanga.

WHO STEPwise Approach to NCD Risk Factor Surveillance

The World Health Organization (WHO) STEPwise approach, or STEPS, is a measurement framework rather than a behavioral theory. It organizes noncommunicable disease risk factor assessment into questionnaire responses, physical measurements, and biochemical measurements (WHO, n.d.). This structure corresponds to the proposed assessment of self-reported conditions and behaviors, blood pressure and BMI, and FBS and lipid profile results.

The WHO (2025) identifies tobacco use, physical inactivity, harmful alcohol use, and unhealthy diets as noncommunicable disease risk factors. It also identifies raised blood pressure, increased blood glucose, elevated blood lipids, and obesity as measurable metabolic risk factors. These findings provide a basis for examining associations between reported behaviors and measured indicators.

A cross-sectional association, however, cannot establish that a behavior caused a particular laboratory or physical finding.

H2: Health behaviors are significantly associated with selected physical and biochemical health indicators among teaching and non-teaching personnel of the Schools Division Office of Pampanga.

Self-reported diagnoses and measured findings offer different forms of evidence. Reports of previously diagnosed hypertension or diabetes depend on prior testing, communication of results, and recall. Comparing reported conditions with corresponding measurements can identify possible differences between awareness and current findings. In the present study, an elevated research measurement will be described as a finding requiring appropriate clinical follow-up rather than treated as a confirmed diagnosis.

H3: Self-reported hypertension and diabetes are significantly associated with their corresponding measured indicators, blood pressure and FBS, respectively

Conceptual Framework

The conceptual framework treats health profile as a set of distinct, observed indicators rather than a single unvalidated score. Personnel classification (teaching or non-teaching), selected personal characteristics, health behaviors, and self-reported conditions are examined in relation to blood pressure, BMI, FBS, and lipid profile components. The framework guides description and comparison within one cross-sectional assessment; its connections indicate proposed statistical associations, not temporal or causal effects.

Personnel classification is the grouping variable for H1. Age and sex, if collected, are contextual characteristics that should be considered when interpreting group differences and behavioral associations. Health behaviors are the explanatory variables for H2. Previously diagnosed hypertension and diabetes are the self-reported variables for H3, each paired only with its corresponding measured indicator. The lipid profile comprises total cholesterol, HDL cholesterol, LDL cholesterol, and triglycerides as available from the laboratory.

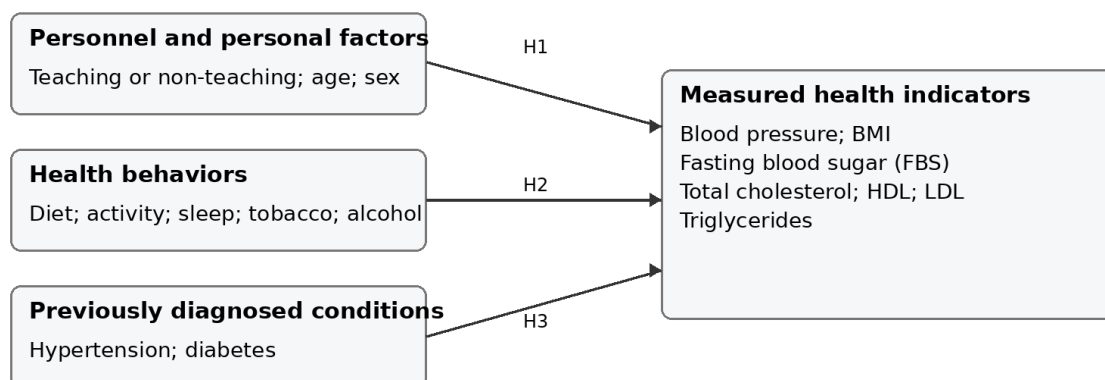


Figure 1. Conceptual Framework

Note. H1 compares personnel groups; H2 tests behavioral associations; H3 pairs reported hypertension and diabetes with blood pressure and FBS. Arrows indicate associations, not causation.

The analytic plan should define each variable, measurement procedure, and laboratory reporting unit before data collection. Group comparisons should report the relevant descriptive estimates alongside significance tests. Associations should be interpreted with attention to age and sex where feasible. The cross-sectional design cannot establish whether a behavior preceded a measured finding. If the research purpose is limited to description, H1-H3 should be converted to research questions.

METHODOLOGY

The study used a quantitative cross-sectional design to assess the health profile of teaching and non-teaching personnel at one point in time. Participants completed a structured questionnaire on previously diagnosed health conditions and health behaviors, including diet, physical activity, sleep, smoking, and alcohol use. Trained personnel measured blood pressure, height, and weight; height and weight were used to calculate body mass index (BMI). Fasting blood sugar (FBS) and lipid profile results served as laboratory indicators. The study described these findings and examined differences and associations, but its design did not permit conclusions about cause and effect.

The study was designed to include 200 teaching and non-teaching personnel assigned to the Schools Division Office of Pampanga. An official personnel roster was used to identify eligible employees and determine how many participants to recruit from each group. Participation was voluntary and based on informed consent. The number of participants in each group and the number with valid results for each measurement were recorded.

The data were encoded and analyzed using Jamovi. Frequencies and percentages described personnel characteristics, self-reported conditions, and health behaviors. Means and standard deviations, or medians and interquartile ranges when appropriate, summarized blood pressure, BMI, FBS, and lipid profile results. Statistical tests suited to the type and distribution of the data compared teaching and non-teaching personnel and examined associations between health behaviors, reported conditions, and measured indicators. The level of significance was set at $\alpha = .05$.

RESEARCH RESULT

This section presents the health profile in a sequence that follows the study objectives. It begins with the proposed score interpretation scheme, then compares selected physical and laboratory indicators by personnel classification. Subsequent tables examine the relationship of reported physical activity with measured indicators and the correspondence of previously reported hypertension and diabetes with current readings. Each table reports the number of valid observations and the statistical test used. The accompanying interpretation emphasizes the direction, magnitude, and precision of the findings, while the final synthesis brings the separate measures together without

treating them as a single health score. The example comprises 200 records, with 100 personnel in each group; laboratory values are available for 190.

Table 1. Selected Measured Indicators by Personnel Classification

Indicator	Teaching M (SD)	Non-teaching M (SD)	p	Difference (95% CI)
BMI, kg/m ²	24.3 (3.4)	24.7 (3.4)	.403	0.4 (−0.5, 1.3)
Systolic BP, mmHg	124.7 (11.1)	128.4 (10.9)	.018	3.7 (0.7, 6.8)
Diastolic BP, mmHg	78.4 (8.0)	81.5 (8.5)	.009	3.1 (0.8, 5.4)
FBS, mg/dL	96.9 (14.9)	96.7 (15.1)	.932	−0.2 (−4.5, 4.1)
Total cholesterol, mg/dL	187.8 (25.5)	197.0 (23.1)	.009	9.3 (2.3, 16.2)
HDL, mg/dL	55.2 (10.0)	50.7 (9.9)	.002	−4.5 (−7.3, −1.7)
LDL, mg/dL	105.3 (27.8)	121.0 (26.0)	< .001	15.7 (8.0, 23.4)
Triglycerides, mg/dL	128.6 (37.1)	143.5 (37.2)	.006	14.9 (4.2, 25.5)

Note. Physical indicators: 100 per group. Laboratory indicators: 94 teaching and 96 non-teaching. BP = blood pressure; BMI = body mass index; FBS = fasting blood sugar; HDL = high-density lipoprotein; LDL = low-density lipoprotein. Difference = non-teaching minus teaching. Each p value is unadjusted.

Welch's independent-samples t test compares the mean of each continuous indicator across independent groups while allowing unequal variances. Table 1 reports the non-teaching minus teaching mean difference with its 95% confidence interval. The largest separation was in LDL cholesterol: 15.7 mg/dL (95% CI [8.0, 23.4]). Systolic blood pressure differed by 3.7 mmHg (95% CI [0.7, 6.8]). BMI and FBS had intervals spanning zero, so these analyses do not show clear group differences. The evidence therefore concerns particular indicators, rather than an overall health ranking of the two groups.

The eight tests are unadjusted, and their p values should be read as exploratory unless primary indicators were specified before analysis. Age, sex, medication use, and other factors may account for some differences. Confidence intervals show both the direction and plausible range of each mean difference; a statistically significant p value does not by itself establish clinical importance. Personnel classification remains a grouping variable rather than a demonstrated cause.

For H1, the evidence should therefore be stated indicator by indicator. The lower confidence limit for the LDL difference remains above zero, whereas the FBS interval includes differences in either direction. This distinction is more informative than classifying the entire hypothesis as simply accepted or rejected. The mean values also overlap across groups; a difference in group averages does not imply that every individual in one group has a less favorable result. Clinical

interpretation should consider each participant's broader history and assessment, which these group-level statistics do not provide.

Table 2. Association of Reported Physical Activity with Measured Indicators

Measured indicator	Valid n	Point-biserial r	p
BMI	200	.057	.423
Systolic BP	200	-.128	.070
FBS	190	.025	.732
Triglycerides	190	-.055	.452

Point-biserial correlation expresses the standardized difference between a binary activity group and a continuous measurement. All four coefficients were small, and none met the .05 criterion. Systolic blood pressure had the strongest coefficient ($r = -.128$, $p = .070$), indicating a weak tendency toward a lower value among those coded active. The analysis does not support H2 for this one behavior and four measured indicators; it cannot address the full H2 hypothesis until the other prespecified behaviors are tested.

This finding does not establish that physical activity has no health relevance. A simple binary question can mask differences in intensity, duration, and consistency, and a cross-sectional assessment cannot determine the timing of behavior relative to the measurement. The hypothesis covering all health behaviors cannot be judged from activity alone; diet, sleep, smoking, and alcohol use would each require their own defined analyses in the actual dataset. For H2, the activity analysis is incomplete by design: it considers four measurements and one behavior. A thorough test of the proposed hypothesis would define each behavioral exposure in advance and consider the number of analyses relative to the sample size. Binary activity coding may place people with quite different activity patterns in the same category. Reporting the distribution of activity days or minutes alongside the association tests would help readers judge whether limited variation or measurement imprecision could have obscured a relationship. Additional models could examine age and sex, but such models should remain limited to prespecified variables and adequate sample size.

Table 3 Reported Diagnoses and Corresponding Measurements

Reported condition	Below stated threshold	At or above threshold	Fisher p
No hypertension; systolic BP	155	8	< .001
Hypertension; systolic BP	24	13	
No diabetes; FBS	176	3	< .001
Diabetes; FBS	7	4	

Fisher's exact test compares the distribution of a two-category measurement between those who did and did not report a prior diagnosis. It is suitable when the cells are small, as in the FBS comparison. The estimated odds ratio for an elevated systolic reading was 10.3 (95% CI [3.5, 32.0]) for those reporting hypertension relative to those who did not. The corresponding odds ratio for elevated FBS was 31.5 (95% CI [4.5, 258.9]) for reported diabetes. The latter interval is very wide because only seven participants met the FBS threshold, so its magnitude is imprecise. Both associations support correspondence, not a diagnostic validation study.

Not all reported diagnoses coincide with a high measurement at the assessment visit. Treatment or day-to-day variation may help explain this. Conversely, an elevated finding among those without a reported diagnosis may indicate a need for clinical review, but it cannot establish that a participant has an undiagnosed condition. The FBS comparison also depends on documented fasting status and valid laboratory results.

For H3, the association is statistically strong, but the contingency table shows why self-report and current measurements should not be treated as identical. Among those reporting hypertension, 24 had a systolic result below the illustrative threshold; among those reporting diabetes, seven had FBS below its threshold. Medication and successful management are plausible explanations, but the example data cannot identify the reason. Eight participants without reported hypertension had a systolic value at or above the threshold, and three without reported diabetes had FBS at or above its threshold. These findings would call for confidential clinical assessment rather than a research diagnosis. The wide FBS odds-ratio interval further indicates substantial uncertainty about the size of that association.

The tables show that the health profile cannot be summarized accurately by one result or by a single low-to-high score. In the group comparisons, blood pressure and lipid values show measurable separation between teaching and non-teaching personnel, whereas BMI and FBS do not. The pattern is therefore multidimensional. A conclusion that the non-teaching group is generally "less healthy" would go beyond the data: it would ignore indicators with no clear group difference, the overlap between individual values, and factors such as age and treatment that were not adjusted for in these comparisons.

The activity findings add a second qualification. Although physical activity is a relevant behavior to measure, the observed correlations here are weak and do not account for the blood pressure and lipid group pattern. The absence of statistically significant correlations should be reported plainly, while recognizing that a brief self-report item and a single-time assessment provide limited information about long-term behavior. The remaining behaviors in the questionnaire require their own prespecified analyses before a general conclusion about health behaviors can be reached.

DISCUSSION

The health profile in the results varied across indicators and personnel groups. Non-teaching personnel showed less favorable average blood pressure and several lipid measurements, whereas body mass index and fasting blood sugar did not show the same group pattern. This distinction matters because a health profile is multidimensional: differences in selected cardiovascular indicators do not establish that one occupational group is less healthy in every respect. The pattern is consistent with the value of examining several cardiometabolic measures together, as demonstrated in the study of public-school teachers by Ratshilivha et al. (2025). Their setting and population differ from those of the present study, however, so their results provide context rather than a benchmark that can be directly transferred to Pampanga.

The group comparison should also be interpreted cautiously. Personnel classification captures a work role, but it does not measure the daily activities, schedules, stressors, or opportunities that may accompany that role. Differences in age, sex, medication use, or other characteristics may partly account for the observed variation. The Social Ecological Model recognizes that health behaviors and outcomes arise in both personal and organizational contexts (McLeroy et al., 1988). In this study, personnel classification represents only a limited part of that context. The findings therefore identify a group-level pattern for further examination, not an occupational mechanism or a causal effect of job designation.

In the example analysis, reported physical activity showed weak associations with the selected physical and biochemical measurements. This result does not establish that physical activity is unimportant. The questionnaire's brief measure may not fully capture frequency, duration, intensity, and sustained participation over time. In addition, current laboratory and blood pressure measurements reflect influences beyond activity alone. Huang et al. (2023) studied a broader combination of lifestyle factors among schoolteachers and found an association between an overall healthy lifestyle and lower cardiometabolic disease burden. Their outcome and combined lifestyle measure differ from the single binary activity comparison in this study. Thus, the two findings need not conflict; they answer different questions. The proposed hypothesis concerning health behaviors should be interpreted only after the prespecified diet, sleep, tobacco, alcohol, and activity variables have been analyzed with suitable attention to multiple testing.

Self-reported hypertension and diabetes were associated with their corresponding current measurements, yet the two forms of information did not agree for every participant. A prior diagnosis reflects what a person has been told during earlier care, while a measurement reflects the value obtained under particular conditions at the time of assessment. Medication and ongoing management may result in a measured value below a chosen threshold even when the prior diagnosis is correct. Conversely, an elevated study measurement in someone who reports no diagnosis requires appropriate clinical review rather than an immediate research diagnosis. Ning et al. (2016) likewise showed that self-reported and biomedical information on hypertension and diabetes can yield

different estimates. This supports the present study's decision to retain both sources of information instead of substituting one for the other.

CONCLUSIONS AND RECOMMENDATIONS

These findings have a practical implication for workplace health planning. A program based only on questionnaire responses could miss measurable concerns, while a program based only on test results would overlook health history and behaviors. The World Health Organization (WHO, 2025) emphasizes detection and timely management of noncommunicable diseases. For the division office, the appropriate use of a health profile would be to return individual results confidentially, facilitate referral when indicated, and use aggregate findings to set education and follow-up priorities. Any proposed intervention should be adapted to the actual pattern in the completed study and implemented without disclosing personal health information to supervisors.

The findings indicate that the health profile differs by indicator rather than moving uniformly in one direction across personnel groups. Blood pressure and lipid measures show the clearest group separation, whereas body mass index and fasting blood sugar do not. The analyzed physical activity item has little explanatory value for the selected measurements in this study. Reported hypertension and diabetes correspond with current readings at the group level but do not replace physical and laboratory assessment for individual participants.

Recommendations

First, the study team should provide each participant with a private explanation of their own measurements and a clear route to a qualified health professional when follow-up is indicated. A research measurement alone should not be used to label an employee with a diagnosis. Second, the division office may use de-identified aggregate results to prioritize health education and voluntary screening. If the observed data show a similar pattern, activities addressing blood pressure and lipid health could be considered alongside broader support for physical activity, nutrition, sleep, and tobacco cessation. Third, any workplace program should be accessible to both teaching and non-teaching personnel and should avoid assigning individual risk on the basis of job classification. Fourth, the office should document participation, referrals, and program reach so that implementation can be evaluated without exposing confidential health records.

ADVANCED RESEARCH

Limitations

A cross-sectional design records exposures and measurements within a limited period and cannot determine whether a behavior preceded a health finding. Self-reported diagnoses and behaviors may be affected by recall, prior access to testing, or a desire to provide socially acceptable answers. A brief behavior question may not capture usual practice over a longer period. Blood pressure can vary between readings, and biochemical results depend on specimen collection, fasting status, laboratory methods, and the interval between testing and the questionnaire. Missing laboratory results may differ

systematically from complete cases. Voluntary participation could also produce selection bias if participating personnel differ from those who decline. Unadjusted group comparisons may reflect age, sex, medication use, or other unmeasured factors, and multiple tests increase the likelihood of chance findings.

Directions for Future Research

Future studies could recruit a larger, probability-based sample across multiple Schools Division Offices and schools to improve the range of work settings represented. Repeated measurements or a prospective design could examine change over time and clarify the order of behaviors and health outcomes. More detailed, validated measures of activity, diet, sleep, and workplace conditions would permit stronger assessment of the pathways suggested by the Social Ecological Model. Research could also evaluate whether a confidential workplace health program improves follow-up, health behavior, and measured indicators over time. Such studies should prespecify primary outcomes, account for confounding, and report participation and missing data transparently.

ACKNOWLEDGMENT

This section gives you the opportunity to thank your colleagues who provided suggestions for your paper. You can also express your appreciation for the financial assistance you received, in completing this research.

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