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Locus of Control and Strategies of Nurse Managers in Addressing Obesity Among Nurses in Riyadh, Kingdom of Saudi Arabia

Kristine N. Martinez[1*] and Jan Rainier C. Balaria[1]
[1]*Wesleyan University-Philippines, Graduate Studies, Master of Arts in Nursing, Philippines*
[*]*knmartinez.1114@yahoo.com*

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ABSTRACT

This quantitative descriptive-correlational study examined nurse managers' work and health locus of control, the weight-control strategies they reported, and relationships among these measures and sociodemographic characteristics in Riyadh, Kingdom of Saudi Arabia. The target population comprised 1,055 nurse managers; 285 were sampled across four managerial strata and 275 completed an online questionnaire (96.49% response rate). The instruments were adapted from the Work Locus of Control Scale, Multidimensional Health Locus of Control Scale, and Weight Control Strategies Scale. Frequency distributions, means, standard deviations, and correlation analyses were used. Most respondents demonstrated an external work locus-of-control orientation (53.82%), while internal health control was rated high for 69.82% of respondents. Overall weight-control strategies were classified as high or consistent among 55.27%, with dietary choices and psychological coping more frequently endorsed than self-monitoring. The most pronounced positive association with overall strategies concerned the Powerful Others health locus-of-control dimension ($r = .534$, $p < .01$); internal health control ($r = .181$, $p < .01$) and work locus of control ($r = .200$, $p < .01$) showed weaker positive associations, whereas Chance was not significantly related to overall strategies ($r = .087$, $p = .150$). Selected demographic measures were significantly associated with control beliefs and reported strategies. The findings inform a proposed nurse-led health-promotion policy and Healthy Nurse, Healthy Workforce Initiative, emphasizing managerial support, individualized behavior-change resources, and sustainable workplace conditions. Because the design was cross-sectional and relied on managers' reports, the findings do not establish causal effects or measured changes in staff-nurse obesity.

Keywords: *nurse managers, locus of control, obesity prevention, weight-control strategies, workplace health promotion, Saudi Arabia*

INTRODUCTION

Obesity is a major public-health and occupational concern, including in healthcare settings where the workforce may encounter demanding shifts, psychosocial stress, restricted meal choices, and reduced opportunities for regular physical activity. The condition is multifactorial and cannot be addressed solely as an individual failure of self-care. Obesity-related risk and its burden in Saudi Arabia reinforce the importance of workplace approaches that take account of organizational realities (Althumiri et al., 2021; Al-Omar et al., 2024; Ahmed & Mohammed, 2025).

Nurses have an important professional role in promoting health but may face conditions that impede their own healthy behavior. Demanding schedules, burnout, and workplace pressures may contribute to difficulties maintaining nutrition, physical activity, and psychological well-being (Darch et al., 2017; Dall'Ora et al., 2020; Books et al., 2020). Furthermore, nurse managers influence staffing, supervision, institutional support, access to resources, and the culture in which staff nurses make health choices (Alluhidan et al., 2020; Grandfield et al., 2023).

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Locus of control offers a potentially useful framework for examining these management-related processes. Rotter (1966) distinguished internal expectations of control from expectations of external control over outcomes. The work locus-of-control construct concerns perceptions of influence over job conditions, while health locus-of-control orientations distinguish personal control, powerful others, and chance (Spector, 1988; Wallston et al., 1978). These constructs may intersect with the specific behavioral strategies that healthcare personnel report implementing, but a cross-sectional association should not be confused with an intervention effect.

Although research has addressed the prevalence and risks of obesity in nursing, the combined examination of nurse-manager control beliefs and obesity-management strategies remains comparatively limited in the Riyadh workplace context. The present study therefore described participating nurse managers' sociodemographic characteristics, work and health locus-of-control scores, and reported dietary, self-monitoring, physical-activity, and psychological-coping strategies. It also tested associations between the characteristics, beliefs, and strategies, with the aim of informing a context-responsive nurse-led obesity prevention and health-promotion policy.

Literature Review

Obesity, Nursing Work, and Health Promotion

Obesity is characterized by excess adiposity that can compromise health, although body mass index alone does not fully capture individual health status. The physical and psychosocial burdens of obesity require prevention and management that account for behavioral, environmental, and organizational factors (World Health Organization, 2021; Ahmed & Mohammed, 2025). National and regional research indicates that excess weight remains a health concern in Saudi Arabia, providing a rationale for prevention initiatives adapted to local contexts (Althumiri et al., 2021; Al-Omar et al., 2024).

The expectation that nurse's model healthy behavior coexists with occupational barriers to self-care. Darch et al. (2017) described health role modeling as a professional concern, while Dall'Ora et al. (2020) examined the conditions that contribute to nurse burnout. Shift patterns and the organization of healthcare work can complicate opportunities for consistent nutrition, exercise, rest, and recovery (Books et al., 2020; Bae, 2024). Accordingly, a workplace-health approach needs to consider both nurses' agency and opportunities made available by the employing organization.

Nurse Leadership and Organizational Support

Nurse managers can coordinate access to resources, promote supportive unit cultures, identify staff needs, and facilitate health-promoting workplace initiatives. Leadership capability is shaped by managerial knowledge as well as institutional authority, staff relationships, and the working environment (Gunawan et al., 2019; Grandfield et al., 2023). Contextual studies of Saudi Arabian nursing similarly highlight the value of leadership preparation and the institutional conditions in which management practices occur (Alluhidan et al., 2020; Alharbi et al., 2021).

Leadership-oriented obesity prevention should go beyond exhortations to change individual behavior. Organizational supports may include predictable access to healthy food, protected breaks where feasible, physical-activity opportunities, non-stigmatizing education, and confidential health referrals. Such actions may strengthen the conditions for behavior change but require further evaluation rather than an assumption that leadership activities automatically produce improvements in staff health (Grandfield et al., 2023; Alharbi et al., 2021).

Locus of Control and Health-Related Decisions

Rotter's (1966) theory distinguishes beliefs that outcomes depend on personal actions from beliefs that outcomes are shaped primarily by external forces. Spector (1988) translated this general construct to the workplace through a validated 16-item scale. Within healthcare, the multidimensional model developed by Wallston et al. (1978) distinguishes internal control, powerful others, and chance, highlighting that people can simultaneously attribute health outcomes to multiple sources.

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Studies of locus-of-control beliefs suggest possible connections with healthcare behaviors and the way individuals respond to support and stress. Pourhoseinzadeh et al. (2017) studied health-control beliefs among emergency personnel, while Björkman et al. (2022) investigated locus of control and self-efficacy in weight-management contexts. However, the associations do not establish that changing nurse managers' control orientation will itself reduce obesity among staff nurses. This distinction is essential when moving from correlational evidence to prospective management interventions.

Behavioral Weight-Control Strategies

Weight control requires repeated behavioral choices, including dietary planning, physical activity, monitoring, and psychological coping. Pinto et al. (2013) developed and validated the Weight Control Strategies Scale to assess these distinct domains. Because use of one domain may differ from another, an overall score can obscure patterns in particular strategies, including whether self-monitoring receives less attention than nutrition education or coping support.

Behavioral strategies also operate within institutional constraints. Reviews and clinical studies emphasize that weight-management outcomes depend on multiple interacting influences, not only knowledge or intention (Forman et al., 2019; Ahmed & Mohammed, 2025). In a nursing leadership context, strategies require attention to workplace resources, feasibility across shifts, social support, and cultural fit. The present study brings these bodies of literature together by assessing both nurse managers' locus of control and the frequency of their reported weight-control strategies.

Conceptual Framework

The study was anchored in Rotter's locus-of-control theory and used a research paradigm connecting nurse managers' sociodemographic profiles and work/health control orientations with four reported weight-control domains. These measures informed correlational analyses and the proposed development of a workplace health-promotion policy and weight-management initiative. Figure 1 reproduces the conceptual framework provided in the thesis; its directional arrows represent the study's analytic and planning sequence rather than proof of causation.

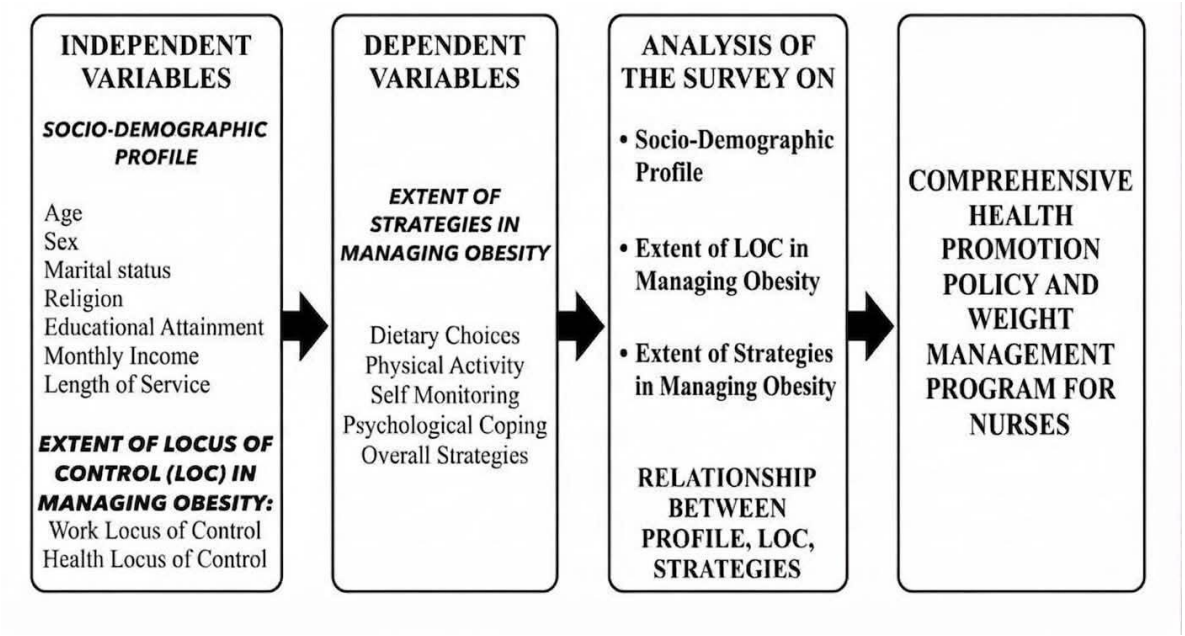


Figure 1. *Research paradigm*

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METHODS

Research Design

The study used a quantitative descriptive-correlational, cross-sectional survey design. Descriptive statistics characterized the nurse-manager respondents and the extent of locus-of-control beliefs and reported weight-control strategies. Correlation analyses explored pairwise relationships without manipulation of exposures or experimental assignment.

Research Locale

The study was situated in healthcare institutions in Riyadh, Kingdom of Saudi Arabia, with a sampling frame described as 1,055 nurse managers. The settings represented nursing management positions in the city's healthcare workforce; data collection used an online survey rather than in-person clinical assessment.

Participants and Sampling Technique

Eligible participants were nurse managers with a current nursing license, at least one year of managerial experience, sufficient proficiency in written English, and willingness to participate. The sampling frame comprised Directors of Nursing, Assistant/Deputy Directors of Nursing, Nurse Supervisors, and Head Nurses. The thesis described stratified random selection within these strata following initial access through professional networks; the invitation target was 285, of whom 275 completed the questionnaire (96.49%). The source reported 128 head nurses, 87 nurse supervisors, 30 assistant/deputy directors, and 30 directors among completed responses.

Research Instruments

The electronic questionnaire covered demographic information and three instruments. The 16-item Nurse Manager Work Locus of Control Scale was contextually adapted from Spector's (1988) WLCS, with higher scores representing a more external orientation. Selected items from Wallston et al.'s (1978) Multidimensional Health Locus of Control framework were adapted to assess Internal, Powerful Others, and Chance orientations in the management context. The 30-item Weight Control Strategies Scale from Pinto et al. (2013) assessed dietary choices, self-monitoring, physical activity, and psychological coping. The thesis described contextual wording modifications for some scales and did not report a separate pilot validation or psychometric reassessment of the adapted questionnaire.

Data Gathering Procedure

Following academic approval, qualified managers were identified and grouped by managerial stratum; the questionnaire was distributed through Google Forms. Participants received study information before responding. The thesis reported data collection beginning in late April 2024, and responses were consolidated for analysis. Invitations and follow-up communication were conducted electronically.

Data Analysis

Frequencies, percentages, means, and standard deviations summarized respondents and measured scales. Correlations assessed the magnitude, direction, and reported statistical significance of associations. The original thesis identified Spearman rank correlations for its demographic-to-locus-of-control matrix and Pearson correlations for other matrices, with two-tailed significance evaluated at .05 and .01. The manuscript retains the original coefficients and reported significance levels without recalculating unprovided respondent-level data. The interpretation of coefficient strength followed cautious correlation-reporting guidance (Akoglu, 2018).

Ethical Considerations

The thesis reported voluntary participation, provision of study information, the ability to decline or discontinue, and protection of confidentiality. Consent was implied by respondents proceeding with the electronic questionnaire after reviewing the information sheet. No institutional review board approval number was provided

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in the source, and none is asserted here. Findings are presented in aggregate to avoid identifying individual nurse managers.

RESULTS AND DISCUSSION

Respondent Characteristics

A total of 275 completed surveys were analyzed. The respondents' mean age was 41.36 years (SD = 7.83); 181 (65.82%) were women and 94 (34.18%) were men. Most were married (55.27%), and 174 (63.27%) reported a college degree as their highest completed credential. Of the management positions represented, head nurses and supervisors were the largest groups. The diversity of professional responsibilities underscores the need for wellness support that can be adapted to different organizational roles.

Table 1. *Participation and selected sociodemographic characteristics*

Measure	Reported result
Sampling frame	1,055 nurse managers
Managers invited	285
Completed responses	275 (96.49% of invited)
Head nurses	128 (46.55%)
Nurse supervisors	87 (31.64%)
Assistant/deputy directors	30 (10.91%)
Directors of Nursing	30 (10.91%)
Age	Mean 41.36 years; SD 7.83
Sex	Female 181 (65.82%); male 94 (34.18%)
Marital status	Married 152 (55.27%); single 106 (38.55%)
Educational attainment	College graduate 174 (63.27%)

Note. rounding may affect summed percentages.

Work and Health Locus of Control

The mean Work Locus of Control score was 71.75 (SD = 12.49), and 148 respondents (53.82%) fell into the thesis's strong external orientation classification. Another 125 (45.45%) had an intermediate orientation, while two respondents (0.73%) were classified as strongly internal. A higher work score represents a more external orientation under the adopted scoring system; it should not be interpreted as stronger personal control.

For health locus of control, 192 participants (69.82%) fell into the high internal-control category, whereas the Powerful Others domain was distributed across low, moderate, and high groups, with a mean of 11.68 (SD = 5.95). The Chance domain had a mean of 5.31 (SD = 0.93) and 146 participants (53.09%) in its high category. These multidimensional responses indicate that nurse managers' health-control beliefs cannot be reduced to a single internal-versus-external score (Wallston et al., 1978).

Table 2. *Locus-of-control scores and distributions (n = 275)*

Domain	Mean (SD)	Source classification
Work locus of control	71.75 (12.49)	External 148 (53.82%); intermediate 125 (45.45%); internal 2 (0.73%)
Health—Internal	26.39 (6.63)	High 192 (69.82%)
Health—Powerful Others	11.68 (5.95)	Moderate 101 (36.73%); low/high 87 each (31.64%)
Health—Chance	5.31 (0.93)	High 146 (53.09%)

Note. Health domain score ranges differ and are not directly comparable without scale-aware interpretation.

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Reported Weight-Control Strategies

The reported overall Weight Control Strategies Scale mean was 83.87 (SD = 27.77), with 152 participants (55.27%) classified as high/consistent users, 93 (33.82%) as moderate/inconsistent users, and 30 (10.91%) as minimal users. Dietary choices and psychological coping received high category ratings, whereas self-monitoring and physical activity had moderate domain means. In particular, only 64 respondents (23.27%) were classified as high self-monitoring users, making this an important potential target for tailored managerial support.

These results describe strategies reported by nurse managers rather than objective changes in nurses' body weight or obesity prevalence. They are compatible with the multidomain behavioral structure of Pinto et al. (2013), which emphasizes the importance of distinguishing dietary, self-monitoring, activity, and coping practices rather than assuming identical use across the domains.

Table 3. *Extent of reported weight-control strategies (n = 275)*

Strategy	Mean (SD)	Respondents in high category
Dietary choices	30.36 (7.87)	209 (76.00%)
Self-monitoring	16.46 (9.05)	64 (23.27%)
Physical activity	16.06 (6.90)	135 (49.09%)
Psychological coping	20.99 (6.86)	187 (68.00%)
Overall strategies	83.87 (27.77)	152 (55.27%)

Note. The source applied subscale-specific cutoffs and an overall classification; the domains have different numbers of items.

Associations of Sociodemographic Characteristics with Control Beliefs and Strategies

The original Spearman correlation matrix showed significant associations between selected demographic characteristics and work locus of control and the Powerful Others and Chance health domains. For example, age was negatively related to Work Locus of Control ($\rho = -.218$, $p < .01$) and Chance ($\rho = -.250$, $p < .01$). Educational attainment was negatively related to Work Locus of Control ($\rho = -.189$, $p < .01$) and Chance ($\rho = -.254$, $p < .01$) but positively associated with Powerful Others ($\rho = .131$, $p < .05$). In contrast, none of the measured demographics was significantly related to the Internal health-control dimension in the reported matrix.

The subsequent Pearson matrix indicated that older age, educational attainment, and income had significant, mostly positive associations with several reported strategy domains, while religion was negatively associated with physical activity, psychological coping, and overall strategy scores. Monthly income was positively associated with overall strategies ($r = .247$, $p < .01$), and the largest reported demographic-to-strategy association concerned income and psychological coping ($r = .400$, $p < .01$). Neither marital status nor length of service showed a significant relationship with any of the five strategy measures in that matrix. These findings should be interpreted cautiously because some variables were coded categorical characteristics and coefficients may depend on coding conventions.

Table 4. *Selected demographic correlations from the original matrices*

Pairing	Coefficient	Significance
Age × Work locus of control	$\rho = -.218$	$p < .01$
Age × Chance health control	$\rho = -.250$	$p < .01$
Education × Powerful Others	$\rho = .131$	$p < .05$
Education × Chance health control	$\rho = -.254$	$p < .01$
Income × Overall strategies	$r = .247$	$p < .01$
Income × Psychological coping	$r = .400$	$p < .01$
Religion × Psychological coping	$r = -.318$	$p < .01$
Length of service × Overall strategies	$r = -.024$	$p = .687$

Note. ρ denotes Spearman rank correlation as used for the demographic-to-locus matrix; r denotes Pearson correlation as identified in the demographic-to-strategy matrix. Negative coefficients for coded categories depend on source coding.

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Associations of Locus of Control with Weight-Control Strategies

The strongest positive correlation in the control-to-strategy matrix was between Powerful Others health locus of control and self-monitoring ($r = .566$, $p < .01$), followed by the association with overall strategy use ($r = .534$, $p < .01$). Powerful Others also showed positive correlations with dietary choices ($r = .417$), physical activity ($r = .520$), and psychological coping ($r = .398$), all reported significant at $p < .01$. These results suggest that nurse managers reporting stronger beliefs in influential others also reported more frequent use of several strategies; they do not demonstrate that external influence caused healthier behavior.

Work locus of control showed weaker positive links with overall strategies ($r = .200$, $p = .001$), dietary choices ($r = .150$, $p = .013$), self-monitoring ($r = .238$, $p < .01$), and physical activity ($r = .191$, $p = .001$), but not psychological coping ($r = .095$, $p = .117$). Internal health control was significantly related to overall strategy use ($r = .181$, $p = .003$), whereas Chance was not ($r = .087$, $p = .150$). Chance did have a weak negative association with psychological coping ($r = −.130$, $p = .031$). The variability in strength and direction across domains shows why the study's third null hypothesis was only partially rejected.

Table 5. *Locus-of-control correlations with obesity-management strategies (n = 275)*

Control domain	Dietary	Self-monitoring	Physical activity	Psychological coping	Overall
Work LOC	.150*	.238**	.191**	.095	.200**
HLOC—Powerful Others	.417**	.566**	.520**	.398**	.534**
HLOC—Chance	.050	.192**	.064	−.130*	.087
HLOC—Internal	.176**	.116	.166**	.238**	.181**

*Note. Original Pearson coefficients; * p < .05; ** p < .01 (two-tailed).*

Research-Based Nurse-Led Policy and Program

Using the associations and domain-level gaps as planning evidence, the thesis proposed two connected outputs: a Nurse-Led Obesity Prevention and Health Promotion Policy for Riyadh healthcare settings and a Healthy Nurse, Healthy Workforce Initiative (HN-HWI). The policy emphasizes leadership accountability, access to healthy choices, culturally respectful care, voluntary participation, supportive management, and monitoring through institutional key performance indicators. HN-HWI is a prospective 12-month, multi-phase workplace wellness program, not an intervention tested in the present research.

The proposed components respond particularly to weaker self-monitoring, variable physical-activity practice, and associations with Powerful Others control. Proposed actions include nurse-led health education, behavior-change coaching, access to dietetic and psychosocial services, flexible participation suited to shift schedules, and periodic implementation review. Costs, improvement targets, and expected health gains remain planning assumptions to be evaluated prospectively; the survey did not establish the initiative's effectiveness or estimate causal effects on obesity prevalence.

Table 6. *Summary of proposed policy and HN-HWI implementation priorities*

Priority	Proposed institutional action	Suggested evaluation measure
Leadership and accountability	Appoint nurse-manager coordinators with administrative oversight	Designated owners and implementation reports
Healthy food access	Coordinate nutrition education and practical dietary options	Participation and service availability
Physical activity	Offer feasible activity opportunities across shifts	Activity participation and access
Self-monitoring	Provide voluntary goal-setting and progress tools	Uptake and retention of tools

Psychological well-being	Offer confidential coping resources and referrals	Engagement and service access
Monitoring and equity	Review reach, feasibility, and implementation at intervals	Quarterly KPIs and annual policy review

Note. Proposed program activities and monitoring indicators; none is presented as an observed post-intervention finding.

Limitations of the Evidence

The study relied on one-city, cross-sectional, self-reported data from managers who could respond to an English online questionnaire. Staff nurses were not surveyed; their measured obesity outcomes, anthropometry, and treatment responses were not assessed. Instruments were adapted for the management context without separate validation of the modified forms, and some demographic variables were correlated using coded categories. The source also used different correlation methods across analyses. Accordingly, associations should not be interpreted causally, and generalization beyond the respondent group requires caution.

CONCLUSION

The study found that most nurse-manager respondents in Riyadh were classified as externally oriented in work locus of control, whereas many simultaneously reported high internal health-control beliefs. Weight-control strategies were reported most frequently in dietary choices and psychological coping, with weaker self-monitoring and moderate physical-activity measures. Sociodemographic characteristics had selective, rather than universal, relationships with control orientations and strategy scores. The Powerful Others health locus-of-control dimension had the largest observed positive correlation with overall strategies, while internal and work locus-of-control dimensions were related weaklier and Chance was not significantly associated with overall strategy use. The findings contribute context-specific correlational evidence that can inform nurse-led workplace wellness planning, but do not demonstrate that manager-led approaches reduce obesity or improve measured staff health outcomes.

Recommendation

Healthcare administrators and nursing leaders should consider piloting a coordinated workplace-health policy that combines managerial support with voluntary, non-stigmatizing, culturally responsive opportunities for healthy eating, activity, self-monitoring, and coping assistance. Human-resource teams and nurse managers should accommodate variable work schedules, provide clear referral routes, and avoid placing sole responsibility for obesity prevention on individual staff members. Nursing education and leadership development programs may integrate locus-of-control concepts with practical health-promotion, communication, and behavior-change competencies.

Before broader implementation of HN-HWI, participating institutions should establish baseline feasibility and outcome indicators, evaluate the adapted instruments, and obtain any necessary ethical and organizational approvals. Future studies should include staff-nurse perspectives, use longitudinal or experimental designs where feasible, account for demographic coding and workplace confounders, and collect objective and confidential health measures when appropriate. Such investigations would be needed to determine whether the proposed initiatives improve nurses' well-being, health practices, or weight-related outcomes.

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