

CORRELATION BETWEEN NURSING STUDENTS' CLIMATE CHANGE KNOWLEDGE, ANXIETY, AND SUSTAINABILITY ATTITUDES: A CROSS-SECTIONAL STUDY

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Abstract

Background:

Climate change is a growing public health concern affecting physical and mental health globally. Among nursing students, awareness, anxiety, and attitudes toward sustainability may influence future professional practice in healthcare.

Methods:

A descriptive cross-sectional study was conducted among 161 nursing students at Shalamar Nursing College, Lahore. Data were collected using a structured questionnaire assessing climate change awareness, climate change anxiety, and sustainability attitudes. Data were analyzed using SPSS version 23. Descriptive statistics, Pearson correlation, and multiple regression analysis were applied.

Results:

Most participants demonstrated good climate change awareness (49.1%) and high sustainability attitudes (61.5%), while moderate climate change anxiety was most common (67.1%). Significant positive correlations were found between awareness and sustainability attitudes ($r = 0.559$, $p < 0.001$), anxiety and awareness ($r = 0.384$, $p < 0.001$), and anxiety and sustainability attitudes ($r = 0.310$, $p < 0.001$). Regression analysis showed that climate change awareness significantly predicted sustainability attitudes ($p < 0.001$), whereas anxiety did not ($p = 0.116$).

Conclusions:

Climate change awareness is a key determinant of sustainability attitudes among nursing students, while anxiety plays a limited predictive role. Strengthening climate education in nursing curricula may enhance sustainable healthcare attitudes.

INTRODUCTION

BACKGROUND

Climate change is recognized as one of the most significant global health challenges, driven by greenhouse gas emissions and associated with increasing environmental and health-related

consequences. It contributes to rising morbidity, mortality, and psychological distress, including anxiety, depression, and stress (Cianconi et al., 2020; İlaslan and Şahin Orak, 2024). Young populations are particularly vulnerable to climate-

related psychological impacts, often described as climate anxiety, which involves persistent worry and emotional distress related to environmental degradation (Atta et al., 2024b).

Healthcare systems are both affected by and contributors to climate change, particularly through carbon emissions and resource consumption. Nurses play a critical role in addressing these challenges through patient education and sustainable healthcare practices. The International Council of Nurses recommends integrating climate change and sustainability education into nursing curricula to prepare future professionals for environmental health challenges (Kapan and Gürel, 2022).

Despite this, limited evidence exists regarding how nursing students' climate change knowledge and anxiety influence their sustainability attitudes. Understanding these relationships is essential for designing effective educational strategies that support both psychological well-being and sustainable professional behavior. Therefore, this study aimed to examine the relationship between climate change awareness, climate-related anxiety, and sustainability attitudes among nursing students.

METHODOLOGY

A descriptive cross-sectional study design was used. The study was conducted at Shalamar Nursing College, Lahore, Pakistan. The target population consisted of Bachelor of Science in Nursing (BSN) students enrolled during the study period.

A total of 161 students were selected using convenience sampling. Inclusion criteria included enrollment in the BSN program, age ≥ 18 years, and willingness to participate. Students who did

not provide consent or were unable to complete the questionnaire were excluded.

Data were collected using a structured self-administered questionnaire comprising four sections: demographic data, climate change awareness, climate change anxiety, and sustainability attitudes. Responses were recorded using a Likert scale. The tool demonstrated acceptable reliability (Cronbach's alpha: 0.75–0.87).

Data collection was conducted in classroom settings, and participants completed the questionnaire within 15–20 minutes. Participation was voluntary and anonymous.

Data were analyzed using SPSS version 23. Descriptive statistics were used to summarize variables. Pearson correlation was used to assess relationships among variables, and multiple regression analysis was used to determine predictors of sustainability attitudes. A p-value < 0.05 was considered statistically significant.

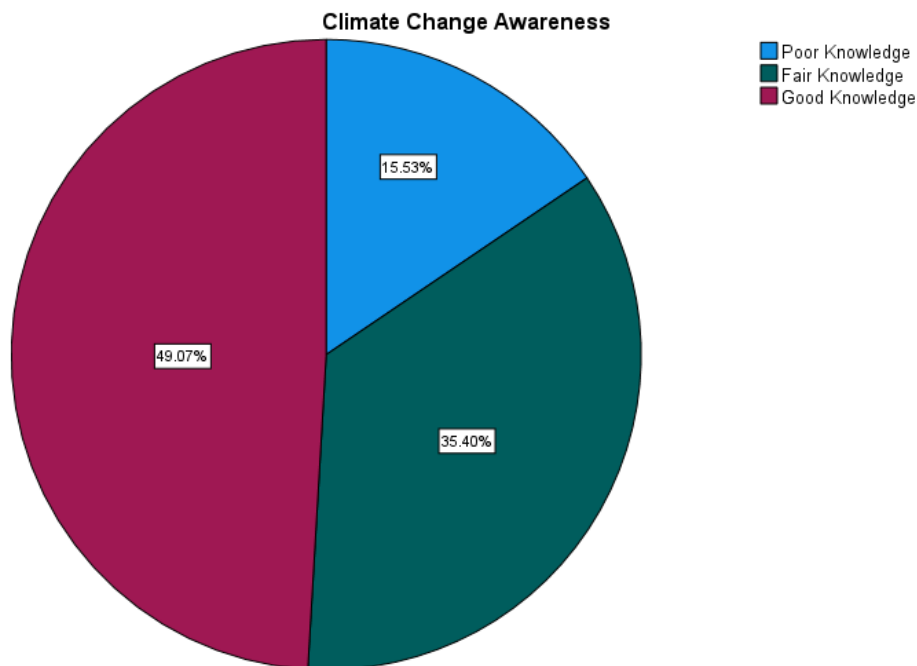
Ethical approval was obtained prior to data collection. Written informed consent was obtained from all participants, and confidentiality was strictly maintained.

RESULTS

A total of 161 nursing students participated in the study. Most participants were aged 21–23 years (47.2%) and were predominantly female (90.7%). The majority resided in urban areas (81.4%), and 35.4% had received formal education on climate change.

Climate Change Awareness

Participants demonstrated good (49.1%), fair (35.4%), and poor (15.5%) levels of awareness.



Climate Change Anxiety

Most participants reported moderate anxiety (67.1%), followed by high (18.6%) and low anxiety (14.3%).

Sustainability Attitudes

The majority showed high sustainability attitudes (61.5%), followed by moderate (34.8%) and low (3.7%).

Correlation Analysis

Significant positive correlations were found:

- Awareness and sustainability attitudes ($r = 0.559, p < 0.001$)
- Anxiety and awareness ($r = 0.384, p < 0.001$)
- Anxiety and sustainability attitudes ($r = 0.310, p < 0.001$)

Regression Analysis

The regression model was significant ($F = 37.775, p < 0.001$) and explained 32.3% of variance in sustainability attitudes ($R^2 = 0.323$).

Climate change awareness significantly predicted sustainability attitudes ($B = 0.219, p < 0.001$), whereas climate change anxiety was not a significant predictor ($B = 0.083, p = 0.116$).

DISCUSSION

This study found that nursing students generally demonstrated good climate change awareness and positive sustainability attitudes, while climate-related anxiety was mostly moderate. These findings indicate a relatively informed and environmentally conscious student population.

Climate change awareness was strongly associated with sustainability attitudes and emerged as the main predictor in regression analysis. This is consistent with previous research suggesting that knowledge and awareness are key drivers of pro-environmental attitudes (Smith et al., 2014; Thompson et al., 2018).

In contrast, climate change anxiety showed only a weak to moderate association with sustainability attitudes and did not significantly predict them. This differs from some prior findings where emotional responses played a stronger role (Jones, 2022). In nursing students, higher baseline environmental knowledge may reduce the behavioral impact of anxiety.

A positive relationship between awareness and anxiety suggests that increased knowledge may heighten emotional concern. However, this does not necessarily translate into behavioral change,

indicating that cognitive factors are more influential than emotional distress in shaping sustainability attitudes.

These findings align with the Theory of Planned Behavior (Ajzen, 1985), which emphasizes the role of cognitive beliefs in attitude formation. In this context, awareness appears to be a stronger determinant of sustainability attitudes than anxiety.

Overall, the study highlights the importance of integrating structured climate education into nursing curricula to strengthen sustainability-oriented attitudes among future healthcare professionals.

CONCLUSION

Nursing students demonstrate moderate to good climate change awareness, moderate anxiety, and generally positive sustainability attitudes. Climate change awareness is the strongest predictor of sustainability attitudes, while climate-related anxiety has no significant predictive effect. These findings emphasize the importance of knowledge-based education in promoting sustainable healthcare attitudes.

LIMITATIONS

This study is limited by its single-institution design, which restricts generalizability. Convenience sampling may introduce selection bias. Self-reported data may be subject to response bias. The cross-sectional design prevents causal inference between variables.

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