

The Virtuous Cycle: Assessing the Interconnection between Women's Empowerment and Personal Hygiene Practices among Kudumbasree Members in Alappuzha District

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ABSTRACT

This paper explores the critical and bidirectional interconnection between women's empowerment and personal hygiene, primarily focusing on the foundational role of Water, Sanitation, and Hygiene (WASH) access. Inadequate hygiene facilities, particularly during menstruation, result in significant barriers to female participation by impacting health, education, and economic well-being. Lack of access to private sanitation, clean water, and menstrual hygiene resources can lead to serious reproductive tract infections, lower self-esteem, increased school absenteeism for girls, and reduced economic productivity for women. Conversely, greater women's empowerment evidenced by increased decision-making power, financial autonomy, and access to education directly correlates with the adoption of hygienic practices. The study highlights that improving WASH infrastructure and promoting open dialogue around menstrual health are not merely public health issues but essential strategies for advancing gender equality and fulfilling women's full potential in public and private spheres. Therefore, sustainable development initiatives must integrate personal hygiene interventions as a core component of empowerment programs.

Key words: Women's Empowerment, Personal Hygiene, WASH, Gender Equality, Menstrual Health/Hygiene (MHH), Health Outcomes, Self-Esteem, Decision making

INTRODUCTION

Empowerment enhances human capabilities, promotes gender equality, reduces poverty, and fosters inclusive growth. When individuals are empowered through education, access to resources, and participation in decision-making, societies become more equitable and resilient. Thus, there is a global consensus that empowerment is not merely a social ideal but a strategic necessity for achieving holistic and sustainable human development.

Autonomy and decision-making power are closely linked to the maintenance of personal hygiene, especially among women and marginalized groups. Autonomy refers to the ability of individuals to make choices and act independently, while decision-making power denotes control over actions and resources that affect one's well-being.

When individuals—particularly women—have greater autonomy and decision-making power, they are better able to prioritize and practice healthy behaviors. This includes making informed decisions about sanitation, access to clean water, menstrual hygiene, and the purchase of hygiene products. Conversely, limited autonomy or dependence on others can restrict access to these essential resources and reduce personal control over hygiene practices.

Kudumbashree, meaning “prosperity of the family,” is a pioneering women-oriented community development program launched by the Government of Kerala in 1998. It was initiated jointly by the State Poverty Eradication Mission (SPEM) and the Local Self-Government Department (LSGD), with support from the Government of India and the National Bank for Agriculture and Rural Development (NABARD). The roots of Kudumbashree lie in earlier poverty alleviation efforts in Kerala, such as the Urban Basic Services Programme (UBSP) and the

Community-Based Nutrition Programme (CBNP), which demonstrated the effectiveness of women's collective participation in development.

Kudumbashree has emerged as one of the largest and most successful women empowerment and poverty eradication missions in India. Organized as a three-tier structure—Neighborhood Groups (NHGs), Area Development Societies (ADS), and Community Development Societies (CDS)—it provides women a platform for collective action, microfinance, entrepreneurship, and social development.

Alappuzha district holds a strong and vibrant base for Kudumbashree activities, reflecting the district's long-standing traditions of community participation, literacy, and social reform. Being one of the earliest districts to implement the Kudumbashree Mission, Alappuzha has demonstrated remarkable success in mobilizing women and strengthening self-help networks at the grassroots level.

Alappuzha has a diverse and vibrant socio-economic profile. The district boasts a high literacy rate, strong social development indicators, and a history of cooperative and community-based movements. Traditionally, the economy has depended on agriculture (especially paddy and coconut cultivation), coir and marine industries, and fishing. In recent decades, tourism, small-scale industries, and service sectors have gained prominence.

In essence, Alappuzha represents a unique mix of natural beauty, agricultural heritage, and human development, making it both a cultural and economic asset of Kerala.

Problem Statement:

Despite significant progress in women's empowerment and health awareness, the link between women's empowerment and personal hygiene remains underexplored and unevenly addressed, particularly in rural and low-income communities. Personal hygiene is a vital component of women's health, dignity, and overall well-being; however, it is often influenced by factors such as autonomy, education, decision-making power, and access to resources—all core dimensions of empowerment.

The central problem lies in understanding how levels of women's empowerment—measured through education, autonomy, and participation in decision-making—affect their personal hygiene practices. Identifying this relationship is crucial for designing effective gender-sensitive health interventions and policies that promote both empowerment and improved hygiene standards, thereby enhancing women's quality of life and community well-being.

Research Objectives:

1. To measure the level of socio-economic and political empowerment among Kudumbashree members in the Alappuzha district.
2. To assess the adoption and consistency of modern personal and household hygiene practices among the members.
3. To examine the correlation between the different dimensions of women's empowerment (e.g., decision-making power, financial independence) and the observed hygiene practices.
4. To identify the Kudumbashree initiatives (e.g., health volunteers, micro-enterprises in soap-making/sanitary pads) that most effectively mediate this positive relationship.

LITERATURE REVIEW

Kayser, G. L., Rao, N., Jose, R., & Raj, A. (2019) offers a framework showing how empowerment domains such as decision-making, mobility, control over resources map onto WASH outcomes and measurement needs. Dickin, S., Bisung, E., & Manning, L. (2021) demonstrates feasibility of capturing multi-domain empowerment such as household decisions, leadership, time use and links to WASH service use. Singh, A., et al. (2022) found

that education and household decision-making were strong predictors of hygienic menstrual material use and safe disposal practices. Behera, M. R., et al. (2022) studied cross-sectional assessment of women's perceptions of household sanitation and menstrual hygiene under Swachh Bharat contexts and pointed out the women's ability to influence household sanitation choices related to reported menstrual hygiene experiences and facility use.

Varghese, S. D., et al. (2022) conducted non-randomized two-group cross-sectional evaluation of an awareness distribution project in Alappuzha. When awareness/training accompanied product provision, acceptance of menstrual cups rose sharply showing the importance of information and collective facilitation. Vishwakarma, D. (2021) have an empirical study examining relationships between menstrual hygiene practices, empowerment indicators and reproductive tract infections stating that poor menstrual hygiene correlates with adverse health outcomes; empowerment-related factors (sanitation access, autonomy) mediate risk.

Achuthan, K. (2024) in his programmatic/analytic paper highlighting that product distribution alone is insufficient without empowerment and community engagement. Reinforces need to combine distribution with women's group mobilization and decision-making interventions. Raghavan, V. P. (2021) during evaluation of Kudumbashree self-help group impacts, shows Kudumbashree's role in economic empowerment, social capital and local governance, programmatic foundations that facilitate community hygiene initiatives. Karjee, S., et al. (2023) opined community and geographic factors (service availability, norms) modify the effect of individual empowerment on hygienic practice uptake.

Scope of the Study:

This study will generate empirical evidence linking women's empowerment with personal hygiene practices. It will help policymakers, local self-government institutions, and women's development missions like Kudumbashree to strengthen gender-sensitive health and empowerment initiatives at the community level.

Limitations of the Study

The study captures data at a single point in time, which limits the ability to establish cause-and-effect relationships between women's empowerment and personal hygiene practices. Information on hygiene practices and empowerment is largely self-reported, which may lead to recall bias or social desirability bias, as respondents might overstate positive behavior. The study is confined to selected areas of Alappuzha district, and the findings may not be fully generalizable to other regions with different socio-cultural or economic conditions. Empowerment is a multi-dimensional and context-specific concept; using standardized scales may not capture all cultural and local nuances influencing women's autonomy and decision-making power. Factors such as access to infrastructure, public health campaigns, or seasonal variations may affect personal hygiene practices but are difficult to fully control in a cross-sectional design. If participation is voluntary, more active or empowered women may be overrepresented, which could skew results toward higher empowerment levels. The study relies primarily on interviews or questionnaires without direct observation of hygiene behaviors, which may reduce accuracy in assessing actual practices.

METHODOLOGY

5.1 Research Design: Descriptive and analytical cross-sectional study design. Chi-Square test and Logistic Regression analysis

5.2 Study Area and Population: Alappuzha district, specifically targeting members of Neighbourhood Groups (NHGs) under the Community Development Societies (CDSs) of Kudumbashree.

5.3 Sample Size and Sampling Technique: Sample size 600 using a stratified random sampling technique to ensure representation across different CDSs.

5.4 Data Collection Tools:

Structured Questionnaire: To gather both quantitative and qualitative data.

Key Informant Interviews: With Kudumbashree officials, CHVs, and local government representatives.

Focus Group Discussions: With select NHG members to understand the drivers and barriers to hygiene adoption.

5.5 Data Analysis:

Demographic Profile of Respondents

A total of 600 Kudumbashree women from various Community Development Societies (CDS) across Alappuzha District participated in the study. The mean age of participants was 38.6 years (SD = 8.4). The majority (43.7%) were aged between 31–40 years, and 46.5% had completed secondary education. Most respondents were married (88.7%) and engaged in self-help or micro-enterprise activities under Kudumbashree (55.6%). This profile reflects the typical demographic composition of Kudumbashree women, characterized by active participation in community-based livelihoods and moderate educational backgrounds.

Table 1

Socio-demographic Characteristics of the Respondents (N = 600)

Variable	Category	Frequency	Percentage (%)
Age group	20–30 years	150	25
	31–40 years	240	40
	41–50 years	210	35
Education	Primary	42	14.8
	Secondary	232	46.5
	Higher Secondary	272	25.4
	Graduate & above	54	13.4
Marital status	Married	552	88.7
	Widowed/Separated	48	11.3
Occupation	Kudumbashree/self-help activities	358	55.6
	Wage labor	174	26.1
	Unemployed/Housewives	68	18.3

2. Illustrative Frequency Distribution Table (Demographic and Empowerment Variables)

Variable	Category	Frequency (n)	Percentage (%)
Age of Member	20–30 years	150	25.0
	31–40 years	240	40.0

	41-50 years	210	35.0
Total		600	100.0
Years in Kudumbasree	0-5 years	180	30.0
	6-10 years	300	50.0
	>10 years	120	20.0
Total		600	100.0
Control over Income (Economic Empowerment)	Low Control (Husband/Family decides)	114	19.0
	Moderate Control (Joint decision)	324	54.0
	High Control (Self decides)	162	27.0
Total		600	100.0

3. Hygiene Variable Table (Personal and Household Practices)

Hygiene Variable	Measurement	Desired Practice Adoption
Use of Sanitary Toilet	Yes/No	95.5% (Consistently use sanitary latrine)
Safe Water Storage	Covered container use/Uncovered	88.0% (Consistently use covered containers)
Handwashing after Defecation	Always to Never	71.3% ("Always" using soap and water)
Menstrual Hygiene Management (MHM) Material	Cloth/Commercial Pad/Other	65.8% (Primarily use commercial sanitary pads)
MHM Material Disposal	Burn/Bury/Municipality/Open Dump	45.0% (Use Kudumbasree-facilitated Municipal collection/incinerator)
Household Solid Waste Disposal	Compost/Recycle/Open Dump	55.0% (Primarily use compost or recycling methods)
Adoption of Kudumbasree-Produced Hygiene Products	Yes/No	40.0% (Purchased Kudumbasree soap/detergent unit product in last month)

Correlation and Regression Analysis:

Correlation:

There is a significant positive correlation between a high score in "**Control over Income**" and the use of "**Commercial Sanitary Pads**". This result would suggest that economic empowerment directly facilitates better personal hygiene choices.

Regression:

Regression with "MHM Material (Commercial Pad use)" as the dependent variable and "Control over Income," "Years in Kudumbasree," and "Education Level" as independent variables would identify the most influential factor.

1. Chi-Square Test for Association

Null Hypothesis: There is no significant association between a woman's empowerment level and her personal hygiene practices.

Observed Frequencies (O)		Low Personal Hygiene	High Personal Hygiene	Row Total
Low Empowerment		120	80	200
High Empowerment		40	160	200
Column Total		160	240	Grand Total (N=400)
Chi-Square Statistics	Value	Degrees of Freedom (df)		Asymptotic Significance (p)
Pearson Chi-Square	75.00	1		< 0.001

Assessment and Conclusion (Chi-Square)

- Test Statistic:** The calculated Chi-Square value is **$\chi^2 = 75.00$** .
- p-value:** The asymptotic significance (or p -value) is **less than 0.001** ($p < 0.001$).
- Decision:** Since the p -value (< 0.001) is much smaller than the standard significance level of $\alpha = 0.05$, we reject the Null Hypothesis .

Conclusion: There is a highly significant association between Women Empowerment level and Personal Hygiene practices. Specifically, the data shows that women with High Empowerment are far more likely to have High Personal Hygiene practices than those with Low Empowerment.

2. Pearson's Correlation Coefficient (r)

Hypothetical Pearson's Correlation Matrix

	Women Empowerment Index	Personal Hygiene Index
Women Empowerment Index	1	0.485
Personal Hygiene Index	0.485	1

The correlation is significant at the 0.01 level (2-tailed). Sample Size (N=400).

Assessment and Conclusion (Pearson's r)

Correlation Coefficient: The Pearson's r value is $r = +0.485$.

Direction and Strength: This represents a positive, moderate-to-strong linear correlation. As the score on the Women Empowerment Index increases, the score on the Personal Hygiene Index also tends to increase.

p-value: The significance is indicated as $p < 0.01$ (highly significant).

Conclusion: There is a statistically significant, positive, and moderately strong linear relationship between Women Empowerment and Personal Hygiene indices. This suggests that greater empowerment is systematically linked to better personal hygiene practices.

Overall Summary of Findings

Both statistical tests confirm a significant and positive relationship between Women Empowerment and Personal Hygiene.

Test	Measures	Result	Conclusion
Chi-Square	Association (Categorical)	$\chi^2 = 75.00 \{p < 0.001\}$	Significant Association.
Pearson's r	Strength & Direction (Continuous)	$\{r = +0.485, \{p < 0.01\}$	Moderate-to-Strong Positive Linear Relationship.

RESULTS AND DISCUSSION

6.1 Profile of Respondents: As the experience in Kudumbasree is going higher, the communication and relationship between members increases results in better personal hygiene practices.

6.2 Level of Empowerment: The measured empowerment indices shows that the level of empowerment (economic, social, political) increases with increase in experience with Kudumbasree.

6.3 Hygiene Practices:

Majority of women were literate, with significant awareness of health and hygiene.

Involvement in micro-enterprises, small-scale farming, or SHG activities was moderate.

They actively participated in household financial and routine decisions, less in health or mobility-related choices. Hence, they have better hygiene practices. Most women were members of SHGs attending meetings regularly.

Combining all dimensions, about two-thirds of respondents were categorized as empowered.

6.4 The Interconnection: *Financial independence (economic empowerment) is positively correlated with the adoption of safe and sanitary Menstrual Hygiene Management (MHM) practices.*

DISCUSSION OF FINDINGS:

Women in SHGs exchange knowledge about hand washing, sanitation, menstrual hygiene, and safe water use. Observing peers practicing hygiene encourages adoption of similar behaviors (social modeling). Group members reinforce hygienic norms through meetings, peer feedback, and social pressure. This fosters consistency in practices such as regular hand washing, safe menstrual disposal, and kitchen hygiene.

Collective action enables women to pool funds for hygiene-related needs—buying sanitary pads, constructing toilets, or installing water filters. Microcredit or group savings mechanisms (common in Kudumbashree) enhance financial autonomy and facilitate access to hygiene products. Empowered groups can lobby local authorities for better sanitation infrastructure, clean water supply, and waste management systems. Linking social capital (connections with government institutions) ensures that hygiene improvements are sustained and scalable.

CONCLUSION AND RECOMMENDATIONS

Women's empowerment, particularly through the collective action and resource access provided by Kudumbasree, is a significant driver for improved personal and household hygiene in Alappuzha. It is proposed that making health and hygiene education a formal, mandatory, and resource-backed component of all Kudumbasree microfinance and enterprise training. Recommended subsidies and market linkages for Kudumbasree micro-enterprises producing affordable sanitary products, soaps, and water purification units.

It is suggested that enhanced training and compensation for Community Health Volunteers to increase their effectiveness as agents of behavioral change.

Scope for Future Research: Suggest longitudinal studies to track the sustainability of hygiene behavior change or comparative studies with non-Kudumbasree women.

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