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## **From Editorial desk: "Redefining Boundaries: Recognizing Nurses as Innovators."**

"Nurses have been the frontlines of promotion, prevention, care, and rehabilitation of people and patients' health and safety. But beyond this lies a less recognized but equally powerful identity — that of the nurses as innovators, critical analytical people, and leaders of change and visionaries."

Our Nurse Innovators journal was launched to publish the research and conversations by nurses about healthcare innovations. Healthcare departments, governing agencies, and the general public have recognized nurses as agents of change; however, scholarly and research articles and practical literature highlighting nurse-led solutions are lacking. This journal aims to address that. This journal will open the space for interdisciplinary dialogue needed in nursing practice. The launch of the journal comes at a moment of critical transformation in healthcare. The challenges we face — from global health inequities and workforce shortages to digital transformation and environmental crises — demand new ways of thinking. Nurses, with their unparalleled proximity to patients and systems, are uniquely positioned to inform.

What do we mean by “nurse innovator”? We see innovation not just in technology or start-ups, but in every instance where nurses challenge assumptions, redesign systems, and imagine better ways of delivering care. It is the nurse in a rural community who adapts mobile phone technology to improve antenatal care. The ICU nurse leads a quality improvement initiative to reduce infections and medication errors. The psychiatric nurse who develops a culturally grounded mental health toolkit for the community. Innovation, in this context, is not always high-tech — it is high-impact!

In this inaugural issue and future ones, we will feature a diverse range of content: original research on nurse-led interventions, field-tested solutions from practice, reflective essays from nurse leaders, and interdisciplinary perspectives that expand our collective imagination. We welcome contributions from nurses in all sectors — clinical, academic, community-based, and entrepreneurial — as well as collaborations with designers, engineers, and policymakers who collaborate with nurses to co-create change.

We hope that this journal is more than a publication. We envision a vibrant ecosystem — a space of dialogue, mentorship, and shared purpose. Whether you are a student with an idea, a frontline nurse solving problems daily, or a scholar exploring the theory of practice-led innovation, you have a place here.

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Because innovation is not the future of nursing — it is already here. And it begins with the nurse.

We invite you to read, contribute, critique, and connect. Let this journal be both a record of what is and a catalyst for what could be.

**Dr. Meena Ganapathy**  
**Chief Editor, NIJ**

# “A correlational study to assess the level of depression and physiological variable amongst the elderly in selected urban slums.”

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**Abstract:** Depression is a growing concern among the elderly worldwide, influenced by financial struggles, family abandonment, and biological degeneration. Aging-related factors such as retirement, financial dependence, bereavement, and social isolation contribute to increased depression rates. Studies indicate that over 18% of individuals aged 65+ experience depression annually, with community data showing up to 25% reporting depressive symptoms. Risk factors include female gender, low socioeconomic status, chronic illness, and lack of social support. Depression is often underdiagnosed due to stigma, misrepresentation of symptoms, and age-related biases among healthcare professionals. A correlational study was conducted in an urban slum in Pune, India, with a sample size of 100 elderly individuals using a standardized Hamilton scale. Findings revealed that 48% had mild depression, 10% moderate, and 1% severe. Significant associations were observed between depression and diastolic blood pressure ( $p = 0.04$ ), and income ( $p = 0.04$ ), though no correlation was found with temperature, pulse, respiratory rate, or systolic blood pressure. The study highlights the need for family support and financial stability in addressing elderly depression. Increased awareness, targeted health policies, and mental health interventions are essential to reduce depression-related complications, including suicide, which disproportionately affects older adults.

**Keywords:** The elderly, depression, physiological parameters, urban slums

## I. INTRODUCTION

Depression as a disorder in today's population all over the world is a concern. There are various factors and reasons for this common disorder in psychiatry. The investigator has taken a keen interest in the aspects of this particular disorder among the elderly population. The interrelationship between certain parameters and depression among the elderly seems unique and needs to be studied about.<sup>1</sup> Question certainly arises what is depression and why the elderly people are more prone to depression? Is it because of a lack of finances or family abandonment or simply because of biological degeneration?

**Mathew B** pointed out that a common experience in old age was retirement which leaves a sudden vacuum in life, dependency (physical illness, financial loss due to less income or reduced earning capacity), disintegration of family as children move away for work or studies living the nest empty, bereavement which may be loss of significant others. Such factors may be the reason for depression among the elderly.<sup>2</sup> As per **Kumar GS, Jain A, Hedge S** study, more than 18% of elderly persons over the age of 65 years, were affected by depression in some form. Some community studies have shown that 25% of older persons report symptoms of depression in a given year.<sup>3</sup> Another study conducted by **Hemalatha J** on depression in older persons pointed out that such issues were often difficult to recognize. It goes unrecognized because of the somatization of symptoms by the older person, adopting an apathetic effect, misrepresenting the problem, stigma concerning depression, or because of ageism among health professionals.<sup>4</sup> As per **APA and WHO 2012** report indicated almost 1 million lives are lost yearly due to suicide, which translates to 3000 suicide deaths every day. For every person who complete suicide, 20 or more may attempt to end his or her life.<sup>5</sup> **Sherrod RA et al. and Prabhudeva S.** reported that depression was primarily a mood disorder that had been reported in 10% to 25% of older adults. It was often first experienced later in life at approximately age 60, and more frequently characterized by medical co-morbidities, greater apathy and cognitive impairment, and stronger association with dementia. Depression in older adults was often difficult for clinicians to diagnose and may be in major or milder forms. Any indication of major depression should be reported immediately for consultation with a mental health specialist, such as a nurse practitioner or physician. The most critical indication was the suicidal intention. The risk of suicide in older adults was 50% higher than among younger adults.<sup>6-7</sup>

As the above literature indicated the importance of assessing the depression among the elderly, the investigator wanted to find out the correlation between vital parameters with depression levels among the elderly residing in slums. The research statement was “A correlational study assess level of depression and physiological variable amongst the elderly in selected urban slums of the Pune city.” The objectives of the study were: 1) To assess the level of depression among the elderly in selected urban slums. 2) To assess the physiological variables (Pulse, blood pressure, respiratory rate, body temperature) among the elderly in selected urban slums. 3) To find the correlation between level of depression and physiological variables among the elderly in selected urban slums. 4) To find the association between level of depression and selected background variables among the elderly in selected urban slums. The research question was ‘**Are there a relationship/ association between the level of depression and physiological variables among the elderly in selected urban slums?**’

## II. METHODOLOGY/ DESIGN OF STUDY

The study used a quantitative approach. The study research design was the explorative type of non-experimental correlational research study design. The data was collected from selected urban slums in Pune city. The total sample size was 100 elderly participants who have given their consent for the study voluntarily. The sampling technique employed by the study was a non-provability purposive sampling technique. The tool included demographic data as section 1 for the demographic profile and section 2 included 17 items standardized Hamilton scale to assess the depression level and a physiological chart record sheet for checking temperature, pulse, respiration rate and blood pressure measurement. The Sphygmomanometer instrument used for vital physiological parameter measurement was calibrated for checking blood pressure measurement. The inclusion criteria where participants should be above 60 years old, who had given their consent voluntarily. They should be residing in urban slums in Pune. Those elderly who was critically ill at time of data collection were excluded from the study.

## III. RESULTS/ FINDINGS

Majority of the elderly were in age group of 66 to 70 years of age with 33%. Majority of the participants were female with 60% and male with 40%. The majority of 68% were married while 32% of the participants were widows or widower. Among the participants, the majority of 68% were illiterate. In regard to employment status, 54% were not working while 22% of them, used to work odd jobs not specified before their retirements. As per the type of family of participants, a majority of 52% belong to nuclear family and 48% belong to the joint family. Among the participants, 31% of them had two children while 24% have more than 4 children. Majority of monthly income earning among the elderly participants (73%) was less than Rs. 5000/-. Majority of participants (98%) have normal temperatures ranging between 98 to 98.6 degree Fahrenheit. All participants had pulse rate between 80 to 100 per minute. While 70% of participants had more than 20 respiration rate per minute. Majority of them (45%) have a systolic BP of 140 mm Hg. And 47% of them had diastolic BP of 90mm Hg. While 8% of them had isolated blood pressure. As indicated in table 1 below, 48% have mild depression, 10% in moderate level of depression and 1% have severe level of depression.

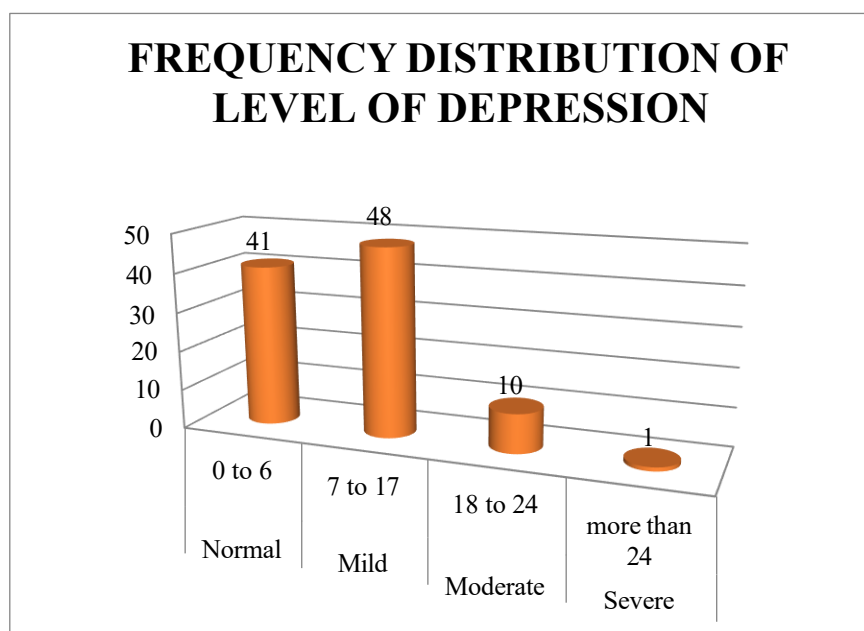
**Table 1. Frequency distribution table showing the level of depression among the elderly residing in urban slumss**

N = 100		
DEPRESSION LEVEL	RANGE SCORE	FREQUENCY
Normal	0 to 6	41
Mild	7 to 17	48
Moderate	18 to 24	10
Severe	more than 24	1
Total		100

There was no significant correlation between physiological parameters like temperature, pulse, respiratory rate and systolic blood pressure level. There was a significant association between diastolic blood pressure and level of



depression among the elderly with  $p$ -value = 0.04. There was a significant relationship between income and level of depression with  $p$ -value 0.04. The association finding revealed that blood pressure as vital parameter had a link with depression level. And the elderly financial conditions had a strong association with their depression level. This finding answers the research question that there are significant association between blood pressure as vital parameter and the level of depression among the elderly residing in urban slums.



**Figure 1. Level of depression among the elderly.**

#### IV. DISCUSSION

A correlation study done by **Moh MC et al.** revealed that the Geriatric Depression Scale–15 score was correlated with pulse wave velocity, and both variables were correlated with the adiposity markers were analyzed (all  $p < 0.05$ ). The results show an association between depressive symptoms with wave velocity of  $B = 1.79$  with CI 0.83 to 2.75 and the study concluded that there was an association between depressive symptoms and elevated pulse rate among older participants with type 2 DM.<sup>8</sup> In the present study there was no association between pulse rate and level of depression. And a significant association between diastolic blood pressure and the elderly depression level. There was also a significant association between monthly financial income and level of depression, which may be indicative of role of financial stability impacting the elderly mood.

#### V. SUMMARY AND CONCLUSION

Family support and financial concern remain important factors while planning health care of the elderly population. Though physiological vital parameters might (except diastolic BP) not be indicators for depression among the elderly, further research need to be conducted to confirm it. Depression among the elderly is a significant issue that needs to be addressed in a timely fashion so that an effective approach will be made to significantly improve depression-related complications like suicide. Suicide among the elderly rate was significant. As indicated by the present study, the elderly person suffers from depression. With significant policy changes to address the economic condition, health issues and adequate family support for elderly people, depression can be combated effectively. A sensitization campaign among the population about depression among the elderly and effective treatment to handle the situation was recommended for future research.

**Fund received:** Investigator-funded.

**Conflict of interest:** No conflict of interest to declare.

**Acknowledgment:** The author wants to acknowledge her PG students who have supported in data collection process.

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# “A study to assess the effectiveness of planned teaching on hand hygiene practices among school going children in selected schools.”

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**Abstract:** A major problem of health issues in our country is the unhygienic environment, lack of hand washing leads to health hazards of the public especially children in school. Children at the school have little knowledge about the importance of hand-washing practices. Lack of proper hygiene and sanitation facilities increases the burden of communicable diseases among developing countries. A study was conducted to assess the effectiveness of planned teaching on hand hygiene practices among school-going children in selected schools. Objectives: 1. Assess the baseline data of school-going children. 2. Assess the hand hygiene practices among school-going children. 3. Evaluate the effectiveness of planned teaching on hand hygiene practices. 4. Compare the practice related to hand hygiene among school-going children. 5. Find an association between hand hygiene practices and selected demographic variables. Methodology: Quantitative research approach, the design was pre-experimental one group pretest post-test. The sampling method employed was simple random sampling and the sample size was 40 participants. The tool included demographic data and a checklist to assess the practice of hand hygiene. Result: Post-test data analysis revealed significant change, as 87.5% of children had very good hand washing practices whereas 12.5% had good hand hygiene practices. The findings of the relationship of selected variables showed that there was an association between hand hygiene practices and age, gender, education of mother and father, occupation of mother and father, family income as well as previous knowledge of hand hygiene practices. Conclusion: The study finding indicated that the planned teaching by demonstration administered by the researcher was effective in increasing the practice of the school children on hand hygiene practices.

**Keywords:** Hand washing practices, school going children, planned teaching.

## I. INTRODUCTION:

A major problem of health issues in our country is the unhygienic environment, lack of hand washing leads to health hazard of the public especially children in the school. Children at the school have little knowledge about the importance of hand washing practices. Education about hand washing will improve their knowledge and practice. Inadequate hygiene and sanitation facilities contribute to the spread of communicable diseases in developing nations.

**Steiner-Asides SE. et al. (2011)** carried out a study to determine the hand washing practices among children in private and public school in the Metropolis in the Greater-Accra region of Ghana, with both private and public schools. A total of 295 schoolchildren were randomly recruited into the study. The study was cross-sectional in design and used qualitative and quantitative methods to collect data. A questionnaire was used to obtain information on socio-demographics. A checklist was used during the observation of hand washing practices and an interview guide was used for the focus group discussions.

The findings revealed that the majority of school children observed did not properly wash their hands with soap, both at school and at home, due to the lack of available and accessible handwashing facilities such as soap, towels, and clean running water. However, the majority of those who used the school toilet practiced hand washing with soap after defecation. Private schools were found to be less likely to wash their hands after using the toilet, before eating, and after eating compared to their public-school counterparts. The need to extend the hand washing campaigns to private schools cannot be over-emphasized. Research conducted about hand hygiene indicated that children with proper hand washing practices were less likely to report gastrointestinal and respiratory symptoms. Previous reports suggested that hand washing with soap reduces morbidity due to diarrhea diseases by 44% and respiratory infections by 23%. World Health Organization reports that every year, 3.8 million children aged less than five die from acute diarrhea diseases and acute respiratory tract infections.<sup>1</sup>

**Mane M. (2017)** Keeping kids healthy and clean is important to teach basic personal hygiene. It is a highly effective and cost-efficient method for preventing diarrhea and acute respiratory infections. The study aimed to evaluate the effectiveness of hand hygiene technique demonstrations on the hand hygiene practices of primary school children. Data was collected



from Rotary Shikshan Santha Malkapur Karad, Maharashtra, India. The study followed a one-group pre-test, post-test design, with 60 primary school children aged 6 to 7 years selected through simple random sampling. On the first day, a pre-demonstration assessment was conducted using a modified observational checklist, followed by the administration of a hand hygiene technique demonstration. After 7 days post-demonstration test was conducted. Descriptive and inferential statistics were used for data analysis. The result showed that the mean pre-demonstration value was 5.383 and mean post-demonstration value was 9.033. The paired t' test value was 23.744, ( $p < 0.0001$ ) showing a significant gain in the improvement of hand hygiene practice of primary school going children. The Chi-square test indicated a significant association between the pre-demonstration practice scores of primary school children and their mothers' education ( $\chi^2 = 16.436$ ,  $p < 0.05$ ) as well as their fathers' education ( $\chi^2 = 23.016$ ,  $p < 0.05$ ). The study concluded that demonstrating the hand hygiene technique effectively enhanced hand hygiene practices among primary school children, making the steps of the technique easy to comprehend and follow.<sup>2</sup> This current study revealed the need for this study and the researcher conducted this study to promote hand-washing practices among school-going children to prevent further infections and reduce the rate of morbidity. The research statement was to assess the effectiveness of planned health teaching on hand hygiene practices among school going children in selected schools of Pune city. Objectives were 1. To evaluate the awareness of hand hygiene practices among school children. 2. To evaluate the effectiveness of planned health teaching on hand hygiene practices. 3. To compare the knowledge related to hand hygiene techniques among school going children. 4. To find an association between hand hygiene practices with selected demographic variables. Hypothesis:  $H_0$ : There is no significant difference in hand hygiene practices of school going children after planned teaching.  $H_1$  - There is significant difference in hand hygiene practices of school going children after planned teaching.

## II. METHODOLOGY:

This study used a quantitative research approach, the design was a pre-experimental one-group pretest post-test. The sampling method was non-probability purposive, and the sample size was 40. The samples were school-going children of 9 to 11 years from the Mahilashram school of MKSSS Pune. Authority permission and informed consent from the participants' parents was taken. The data collection process was completed with all ethical formalities. The tool included section I for demographic baseline data of school-going children and a checklist to assess the practice of hand washing technique of students.

## III. RESULT:

Table no.1 Demographic profile:

N = 40

Sample characteristics	Frequency (f)	Percentage %
<b>Age</b>		
9 years	00	00
10 years	25	62.5%
11 years	15	37.5%
<b>Gender</b>		
Male	00	00
Female	40	100%
<b>Class group</b>		
4 <sup>th</sup>	0	00
5 <sup>th</sup>	40	100%
6 <sup>th</sup>	0	00
<b>Education of father</b>		
Illiterate	02	5%

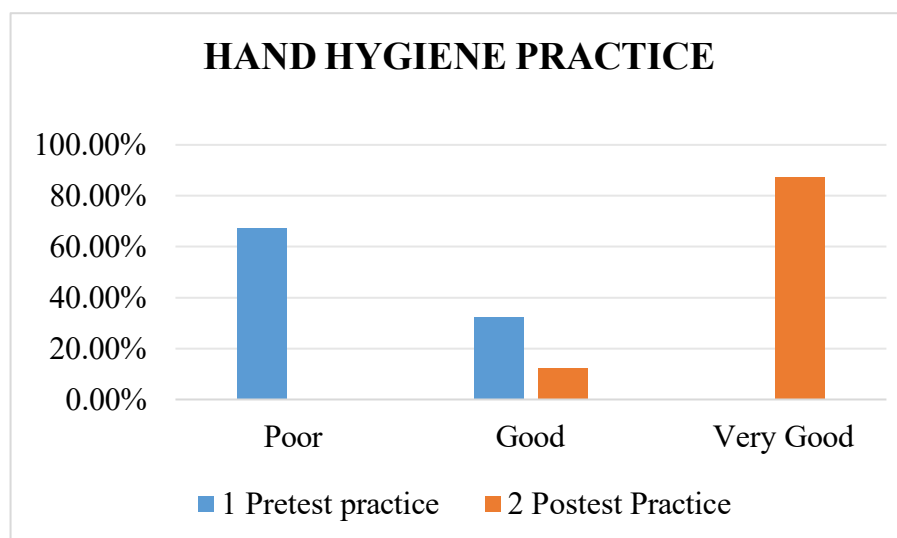
<b>Primary</b>	11	27.5%
<b>Secondary</b>	18	45%
<b>Graduate</b>	09	22.5%
<b>Education of mother</b>		
<b>Illiterate</b>	00	00
<b>Primary</b>	08	20%
<b>Secondary</b>	18	45%
<b>Graduate</b>	14	35%
<b>Occupation of father</b>		
<b>Sample characteristics</b>	<b>Frequency (f)</b>	<b>Percentage %</b>
<b>Medical</b>	02	5%
<b>Non-medical</b>	38	95%
<b>Occupation of mother</b>		
<b>Medical</b>	1	2.5%
<b>Nonmedical</b>	39	95%
<b>Family income</b>		
<b>&lt;5000INR</b>	01	2.5%
<b>5001-10000INR</b>	19	47.5%
<b>10001-15000INR</b>	16	40%
<b>&gt;15000INR</b>	04	10%
<b>Do you know hand washing technique?</b>		
<b>Yes</b>	10	25%
<b>No</b>	30	75%

The above table no. 1 shows that the majority of the subjects were at the age of 10 years (62.5%), female, and from the 5<sup>th</sup> class group (100%). The education of parents belongs to the secondary category. The majority come to the category of nonmedical occupation. The majority of family income (47.5%) was 50001-10,000 INR whereas (40%) of subjects had more than 15000 INR family income. 75% were not known to hand hygiene techniques.

**Table no. 2: Comparison between Pretest and Post-test Hand Hygiene Practices.**

**N = 40**

S N	Category	Pretest Practice	Percentage (%)	Post-test Practice	Percentage (%)
1	Poor	27	67.5%	00	0%
2	Good	13	32.5%	05	12.5%
3	Very Good	00	0%	35	87.5%



**Fig.1: Effectiveness of hand hygiene practices.**

The table no. 2 shows that pretest and post-test observation, it shows that after planned teaching on hand hygiene practices among school going children's, practice score was improved.

**Table no. 3 Comparison between pretest and post-test hand hygiene practices**

Particular	Mean	SD	T-test	p-value
Pretest	6.725	1.61	0.000 3754	p < 0.05
Post-test	8.575	1.90		

Table no.3 shows that the statistical paired t-test value was 0.00037 with  $p < 0.05$ , hence it was found to be statistically significant at 0.05% level. It was concluded that after receiving planned teaching hand hygiene practices had improved among school going children. Hence rejecting the null hypothesis and accepting the research hypothesis means a significant difference in hand hygiene practices of school going children after planned teaching.

#### IV. DISCUSSION:

Keeping hands clean through improved hand hygiene is one of the most important steps one can take to avoid getting sick and spreading germs to others. A study was conducted to evaluate hand hygiene among school children. The objectives were to assess the level of hand hygiene practices among school children and to analyze the relationship between hand hygiene practices and selected socio-demographic factors. A non-experimental research approach with a descriptive research design was utilized for this study. By using purposive sampling technique a total of 100 samples were included for the study. The test was conducted by check-list. The data were recorded and coded. The data analysis was done by using descriptive and inferential statistics. The result revealed that there is relatively good practice of hand washing among school children. The study implies that creating more awareness of hand washing will prevent the occurrence of infection among school children.<sup>3</sup>

#### V. IMPLICATIONS:

The findings of the study have implications in different fields of nursing is nursing practice, nursing education, nursing administration, and nursing research. Nursing Education: Nursing educators can encourage student nurses to organize hand washing programs for school children.

Health education should be consistently incorporated into all nursing curricula, following evidence-based practices. Nursing Administration: Nurse Administrators should motivate their subordinates to participate in various programs and improve their knowledge and skills, about hand hygiene practices. Nursing Research: Comprehensive research can be carried out to identify health issues arising from inadequate handwashing and can be integrated into nursing education and practice. Nursing Practices: Pediatric health nurses should take the initiative in imparting practice to school children through periodical health education programs in school, hospitals and community settings.

#### VI. RECOMMENDATION:

1. A similar study may be replicated in large samples.
2. A similar study can be done by using an information booklet.
3. A comparative study can be conducted in urban and rural school children.
4. A similar study can be conducted with a control group and experimental group to assess the effectiveness of health teaching regarding hand washing practices.

#### VII. CONCLUSION:

The study findings proved that the planned health teaching administered by the researcher was effective in increasing the practice of the school children's hand hygiene practices. Hand hygiene is an effective infection prevention technique as it was used in the Covid-19 pandemic situation. Several infectious diseases can be spread from one person to another by contaminated hands such as diarrheal diseases, colds, and coughs can be prevented from it. In hospitals, health care providers also use hand hygiene techniques to prevent cross-infection. Hand hygiene can become a lifelong healthy habit if taught from an early age.

**Conflict of interest- No conflict of interest to declare.**

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# “A descriptive study to assess the knowledge and practices regarding biomedical waste segregation among nursing students.”

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**Abstract: Introduction:** Bio-medical waste is any waste generated during the diagnosis, treatment, and immunization of human beings & animal research activities on the health campus. Proper segregation and handling of hazardous waste is essential to minimize these risks in health care settings. The present study aims to assess the knowledge and practices related to biomedical waste segregation among nursing students. **Methodology:** A total of 400 nursing students were selected by using a convenient sampling technique. Informed, written as well as online consent was obtained from the participants. The self-structured questionnaire to assess the knowledge and practices regarding bio-medical waste segregation was distributed to the participants. **Result:** The result indicates that only 101 (25.25 %) nursing students had good knowledge of biomedical waste segregation. There was a significant positive correlation with the source of information ( $p = 0.040$ ) with knowledge where 358 (89.5%) students have good practices in biomedical waste segregation and there was a significant positive correlation with the education of the head of the family and practices of biomedical waste segregation ( $p = 0.030$ ) at the significance level of 0.05. **Conclusion:** There was a critical need to ensure that nursing students fully understand the biomedical waste segregation methods. The research highlighted the necessity of training programs to educate nursing students about the significance of proper waste segregation and to ensure adherence to established protocols which can ultimately have a positive impact on healthcare settings and public health.

**Keywords:** knowledge, practices, biomedical waste segregation, nursing students, nursing institute, teaching module

## I. INTRODUCTION

According to WHO, bio-medical waste (BMW) means any waste, that is generated during the diagnosis, treatment, or immunization of human beings or animals, or in research activities pertaining thereto, or in the production or testing of biologicals. Biomedical waste (BMW) poses significant environmental and health risks if not managed properly. Proper segregation and handling of hazardous waste is essential to minimize these risks and efforts have been or are being made internationally. For safe and scientific management of biomedical waste, handling, segregation, mutilation, disinfection, storage, transportation, and finally disposal are vital steps for any healthcare institution. Proper segregation of biomedical waste is essential to minimize these risks.<sup>1</sup> Nursing students, as future healthcare professionals, must be well-prepared in BMW segregation practices.

## II. BACKGROUND

The amount of BMW being generated in our country is increasing. In 2023, about 743 tons/day of biomedical waste was generated in India, out of which 694 tons/day were treated and disposed of through CBWTFs and Captive Treatment Facilities (CTFs).<sup>2</sup> Inadequate knowledge of handling BMW may have serious health consequences and a significant impact on the environment. Lack of segregation practices will cause environmental pollution, unpleasant smell, growth and multiplication of vectors like insects, and rodents and may lead to the transmission of diseases like typhoid, cholera, hepatitis, and AIDS through injuries from syringes and needles contaminated with humans.<sup>3</sup>

**Diwan T, et al. (2021)** conducted a cross-sectional observational study to assess BMW management in a tertiary care hospital among 105 healthcare workers, selected by simple random sampling, using a semi-structured questionnaire. According to their findings, 100% of doctors and lab technicians were aware of biomedical waste generation and legislation. They were concerned about needle stick injury but the recapping practice of needles was found to be as 18.7%, 45.5%, 100%, and 27% among doctors, nurses, lab technicians, and sanitary staff respectively. 52.40% had not received in-service training.<sup>4</sup>

**Deress T, et al. (2018)** conducted an institution-based cross-sectional study to assess knowledge, attitude, and practice about biomedical waste management and associated factors among 296 healthcare professionals. Data were collected using a structured self-administered questionnaire and observational checklist. Researchers found that 168 (56.8%), 196 (66.2%), and 229 (77.4%) had inadequate knowledge, not satisfactory attitude, and practice scores respectively. Regarding associated factors, M.Sc. and MD<sup>+</sup>, BSc holders, and availability of color-coded bins were identified as more likely to contribute to adequate knowledge, favourable attitude, and adequate practice scores, respectively. The



majority of healthcare professionals did not access BMW management training. So, there is need of regular training should be given to healthcare professionals.<sup>5</sup>

**Tiwari K, et al. (2021)** conducted a descriptive cross-sectional study on knowledge, attitude, and practices regarding biomedical waste management. The researcher found that the majority of participants had a poor level of knowledge in various domains of biomedical waste management awareness (78.5%), color coding (84.7%), biomedical waste disposal methods (92.6%), and universal precautions (97.5%) except for biomedical waste hazard symbol (15.3%). Overall knowledge of participants was poor for 155 (95.1%), and excellent for 8 (4.9). overall attitude was poor for 124 (76.1), and excellent for 39 (23.9). overall practice was excellent 121 (74.2), poor 42 (25.8).<sup>6</sup>

The studies highlighted the importance of proper biomedical waste handling, its effects on public health, and the need for training or awareness campaigns in nursing institutions. This study aims to assess the knowledge and practices related to biomedical waste segregation among nursing students. This study helps to bridge that gap and develop an educational module based on the findings. By identifying gaps and areas for improvement, the findings can be informed to educational programs and policymakers to enhance waste management practices in clinical settings.

The objectives of the present study were to assess the knowledge regarding biomedical waste segregation among nursing students, to examine the current practices, to associate the findings of knowledge and practices regarding biomedical waste segregation with selected demographic variables, and to develop a teaching tool to educate the students about Biomedical Waste Segregation.

### III. METHODOLOGY

A descriptive research design method was adopted to conduct the study in a selected nursing institute in Pune. A total of 400 nursing students were selected by using a convenient sampling technique. Informed, written hard copy as well as online consent was obtained from the participants. The self-structured questionnaire was developed to assess the knowledge and practices regarding bio-medical waste segregation and was distributed to the participants using Google Forms. Difficulties while filling out the questionnaire had been addressed by the researchers. Descriptive statistics (frequency, percentage) were used to analyze the data, and inferential statistics were used to determine the statistical significance –correlation using data analysis in MS Excel). A significance level of less than 0.05 was set for the tests.

### IV. RESULT

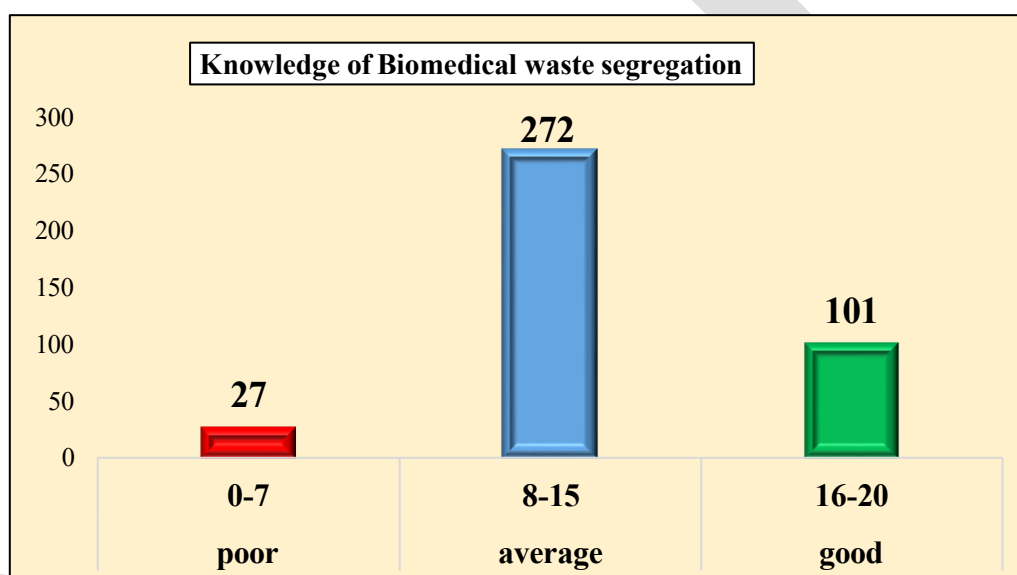
The section deals with the selected demographic variables such as program undergoing, year of course, age, education of head of family, awareness of biomedical waste segregation, and source of information.

**Table 1: The demographic data of the sample**

**N=400**

Sr. no	Variables	Frequency ( n=400)	Percentage %	Association of knowledge with demographic variable	Association of practices with demographic variable
<b>1</b>	<b>Programme</b>				
	ANM	42	10.5		
	GNM	216	54		
	B.Sc. Nursing	140	35	0.428	0.403
	P.B.B.Sc. Nursing	0	0		
	MSc Nursing	2	0.5		
<b>2</b>	<b>Year of Course</b>				
	1st year	97	24.25		
	2nd year	202	50.5	0.054	0.686
	3rd year	63	15.75		
	4th year	38	9.5		
<b>3</b>	<b>Age</b>				
	Below 18 years	11	2.75		
	18-21 years	281	70.25	0.107	0.254
	Above 21 years	108	27		

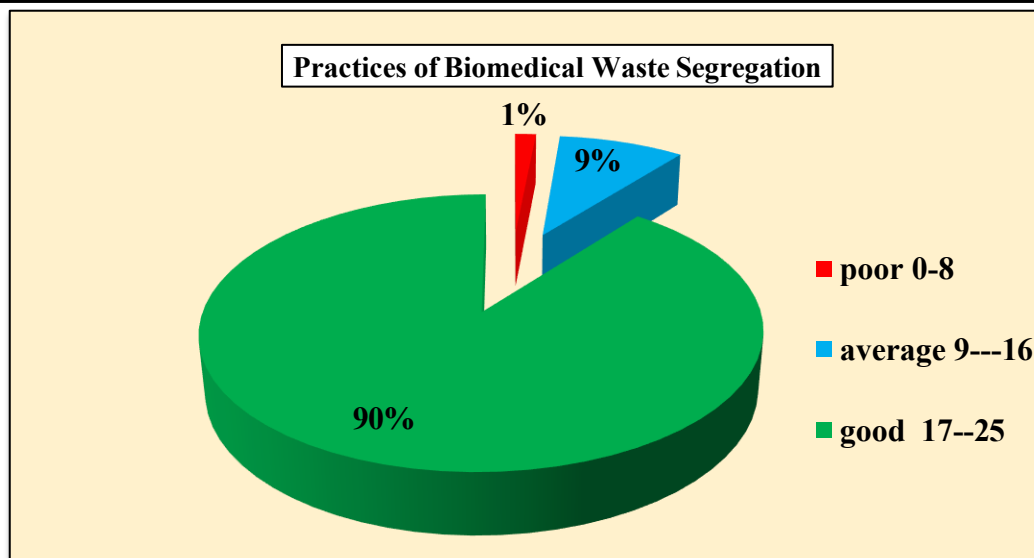
<b>4</b>	<b>Education of Head of Family</b>				
	Illiterate	45	11.25		
	Undergraduate	233	58.25	-0.051	<b>0.030</b>
	Graduate	122	30.5		
<b>5</b>	<b>Are you aware of Biomedical Waste Segregation?</b>			—	—
	Yes	400	100		
	No	0	0		
<b>6</b>	<b>If yes, the source of information</b>				
	Teachers	236	59		
	Social circle	53	13.25	<b>0.040</b>	0.114
	Books	88	22		
	Internet	23	5.75		



**Figure no 1: Knowledge of biomedical waste segregation in nursing students**

The above figure no 1 describes the knowledge of biomedical waste segregation in nursing students which indicates 101 (25.25 %) students have good knowledge of biomedical waste segregation 272 (68%) students have average knowledge of biomedical waste segregation, about 27 (6.75%) students have poor knowledge of biomedical waste segregation.

The correlation between the source of information and knowledge of biomedical waste segregation is significant ( $p = 0.040$ ) at the significance level of 0.05



**Figure no 2: Practices of Biomedical Waste Segregation**

Above figure no 2 describes the practices of biomedical waste segregation in which, 358 (89.5%) students have good practices of biomedical waste segregation. Around 36 (9%) students are following average practices of biomedical waste segregation and 6 (1.5%) students have poor practices of biomedical waste segregation.

The correlation between the education of the head of the family and practices of biomedical waste segregation is significant ( $p = 0.030$ ) at the significance level of 0.05.

**Development of a teaching module:** Based on the gaps identified, a teaching module will be developed for nursing students, including the importance of biomedical waste segregation, Proper classification and color coding, procedures for safe disposal and handling and case studies or examples to illustrate potential consequences of improper waste management. The module could be integrated into the nursing curriculum and also include practical demonstrations and evaluations.

## V. IMPLICATIONS

- **Educational Implications:** Enhancing the nursing curriculum with a focus on biomedical waste management.
- **Healthcare Implications:** Ensuring that nursing students become advocates for proper biomedical waste segregation, thus reducing the risk of contamination and promoting better healthcare practices.

### 1) Limitations

- Limited to one nursing institute in Pune, so the results may not be generalized to other regions.
- Self-reported data might not always reflect actual practices.

## VI. DISCUSSION

A similar cross-sectional hospital-based study was conducted by **Prachi P, et al. (2019)** to assess knowledge, attitude, and practice of biomedical waste management among 100 interns of Dharwad. After obtaining informed consent, a pre-tested, semi-structured questionnaire was used to collect the data. Their result showed that 15% of the interns were not able to name correctly the color codes of bags. Only two-thirds were aware of where and how bio-medical wastes are treated. Hence they concluded that though interns were aware of the seriousness of the biomedical waste to public health, but still exists a knowledge, attitude, and practice gap that needs to be identified and suitably addressed.<sup>7</sup> The present study also identified the gap between knowledge and practices regarding biomedical waste segregation and highlights the necessity of training programs to educate nursing students about the significance of proper waste segregation and to ensure adherence to established protocols.

## VII. CONCLUSION

There is a critical need to ensure that nursing students fully understand the biomedical waste segregation method. The study utilized a descriptive research design, employing surveys or questionnaires to collect data from the nursing students. By conducting such a study, you would not only assess the current state of knowledge but also provide concrete recommendations for improving the training of nursing students in biomedical waste management. The findings were

expected to guide the creation of an effective teaching module that would ultimately improve the quality of biomedical waste segregation management by future nursing professionals. This can ultimately have a positive impact on healthcare settings and public health.

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**Conflict of interest-** No conflict of interest to declare.

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# “A study to assess knowledge and attitude of nursing students towards e-learning in Covid-19 pandemic in selected nursing institute of Pune city.”

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**Abstract:** A descriptive study was conducted to assess the knowledge and attitude of nursing students toward e-learning during the COVID-19 pandemic in selected nursing institutes of Pune City. The objectives of the study were to analyze the nursing student's knowledge of e-learning during the COVID-19 outbreak, to identify the attitude of nursing students towards e-learning during the COVID-19 outbreak, and to find out the association between demographic variables and e-learning during the COVID-19 outbreak. **Material and method:** The study design consists of a descriptive study approach with a non-experimental design. The study population was nursing students of age group 17 to 21 years in selected colleges of Pune city. A nonprobability convenience sampling technique was adopted. The sample population consisted of 160 students. The tool was prepared by using 3 sections as Demographic Data, a Questionnaire on knowledge, Questionnaire on the attitude of nursing students. Results showed that 49% of subjects were in the age group of above 20 years, all subjects were female. A maximum 87% of subjects have good knowledge and 6% of subjects have excellent knowledge of e-learning and 77% of subjects has a positive attitude towards e-learning. 5% of subjects has a neutral attitude and 18 % of subjects has a negative attitude towards e-learning. **Conclusion:** This COVID-19 crisis made nursing students to accept modern technology by using e-learning. From the result, it can be concluded that subjects had good knowledge and positive attitudes toward e-learning.

**Keywords:** Covid-19, E-Learning, Nursing Students

## I. INTRODUCTION

The global pandemic COVID-19 has caused widespread quarantines, turning many cities into ghost towns and significantly affecting educational institutions. In this context, online teaching and learning have emerged as the solution to the crisis, forcing schools, colleges, and universities to shift from offline to online modes of instruction. This transformation is pushing previously hesitant institutions to embrace modern technology.<sup>1</sup>

The purpose of education is to mold a person to be perfect. Education provides the pathway to reach their destiny. Education helps in inculcating social responsibilities as well. The main core of education is to learn. Learning involves gaining knowledge or skills through study, experience, or teaching. Any global incident impacts education, and COVID-19 is no exception. This pandemic has led to the worldwide closure of educational institutions to control the virus's spread. This made the teaching professionals think of alternative methods of teaching during this lockdown and thus it paved the way for web-based learning e-learning or online learning. In today's scenario learning has stepped into the digital world in which teaching professionals and students are virtually connected. E-learning is quite simple to understand and implement. Using a desktop, laptop, or smartphone and the internet is a key part of this learning method. E-learning provides rapid growth and proved to be the best in all sectors, especially in education during this lockdown.<sup>2</sup>

In a November 2021 study by **Ryan Michael F. Oducado** on "Shifting the Education Paradigm and the COVID-19 Pandemic: Nursing Students' Attitudes to E-Learning," 175 second-year nursing students from two selected nursing schools in the Philippines were surveyed. Over 80% of participants felt that e-learning was impersonal and lacked the emotional connection of face-to-face classes, and around 75% noted reduced student-teacher interaction in online settings. More than half of the students believed that e-learning requires advanced technical knowledge and is not an efficient learning method. However, 53.15% acknowledged the schedule flexibility that e-learning offers. Only a small percentage (6.37%) preferred e-learning over traditional methods. Overall, nursing students exhibited ambivalent and negative attitudes towards e-learning during the COVID-19 pandemic, with a stable internet connection being a common issue. They generally favored traditional face-to-face teaching over online learning.<sup>3</sup>



At this pandemic societal need indicated importance of assessing knowledge and attitude of nursing students towards Learning in pandemic period. The research statement was “to assess knowledge and attitude of nursing students towards e-Learning in COVID-19 pandemic in selected nursing institutes.” The objectives of the study were: 1. To analyze the nursing student’s knowledge towards e-learning during COVID -19 outbreak. 2. To identify attitude of nursing students towards e-learning during covid-19 outbreak. 3. To find out association between demographic variable and e- learning covid-19 outbreak. Research question was ‘Is the knowledge and attitude of nursing students about e-learning is changed during Covid-19?’

## II. METHODOLOGY/ DESIGN OF STUDY

The study used a quantitative approach. The study research design was the descriptive type of non-experimental research study design. The data was collected from a selected nursing college in Pune city. The total sample size was 160 students of the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> Basic B. Sc. nursing in age group of 17 to above 21 years who have given their consent for the study voluntarily. The sampling technique employed by the study was a nonprobability convenience sampling technique. The tool included demographic data as section 1 for the demographic profile includes name, age, gender, year of study, number of children in the family, occupation of parents, income in Rupees per month, and type of family, section 2 included structured knowledge related questionnaire consists of knowledge regarding e-learning which include: What is e-learning, its flexibility, LMS etc. and section 3 included structured attitude related questionnaire consists of attitude scale regarding e-learning which includes whether e-learning requires expensive technical support, is it easier to revise electric material than printed material, enhance knowledge level, is it stressful or boring etc. The inclusion criteria were participants should be in the age group 17-21 years, and are willing to participate in research study. They should be studying in selected nursing colleges in Pune. Those belonging to other professional courses were excluded from the study.

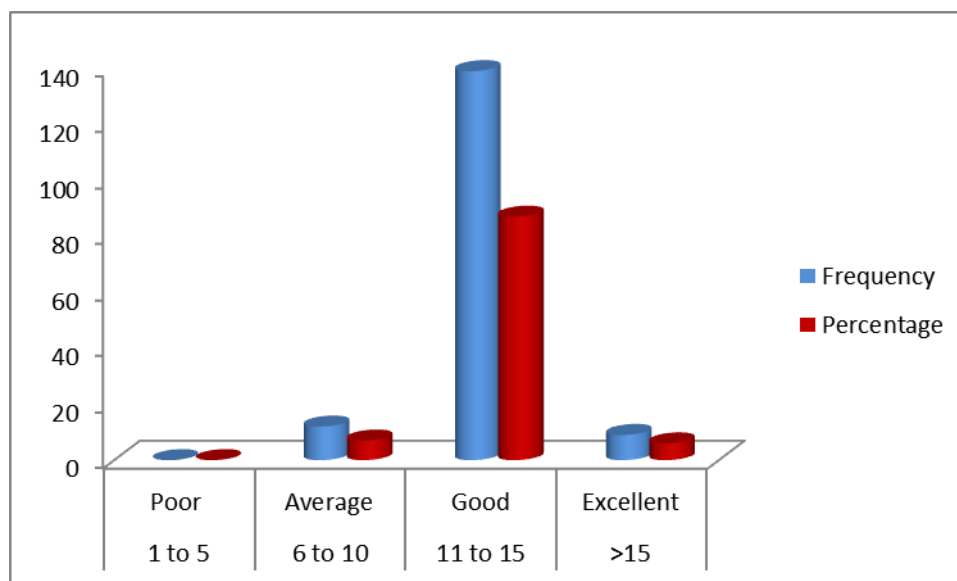
## III. RESULTS/ FINDINGS

The study analysis of baseline characteristics was done through descriptive statistics. It indicates that 49% of subjects were in the age group of 20.1 to above, 36% of subjects were in the age group of 19.1 to 20 years, 100 % of subjects were female, 14% of subjects belonged to joint family. 32% of subjects were 1<sup>st</sup> Year, 29 % of subjects were 2<sup>nd</sup> Year, 15 % of subjects was 3<sup>rd</sup> Year B. B.Sc. & 24 % of subjects were 4<sup>th</sup> Year B.B.Sc. nursing students participated in the study. The analysis of knowledge of e-learning, it is found 87 % of subjects have good knowledge of e-learning. Regarding attitude towards e-learning, 77% of subjects have positive attitude towards e-learning.

Table 1. Frequency distribution of knowledge of nursing students towards e-learning

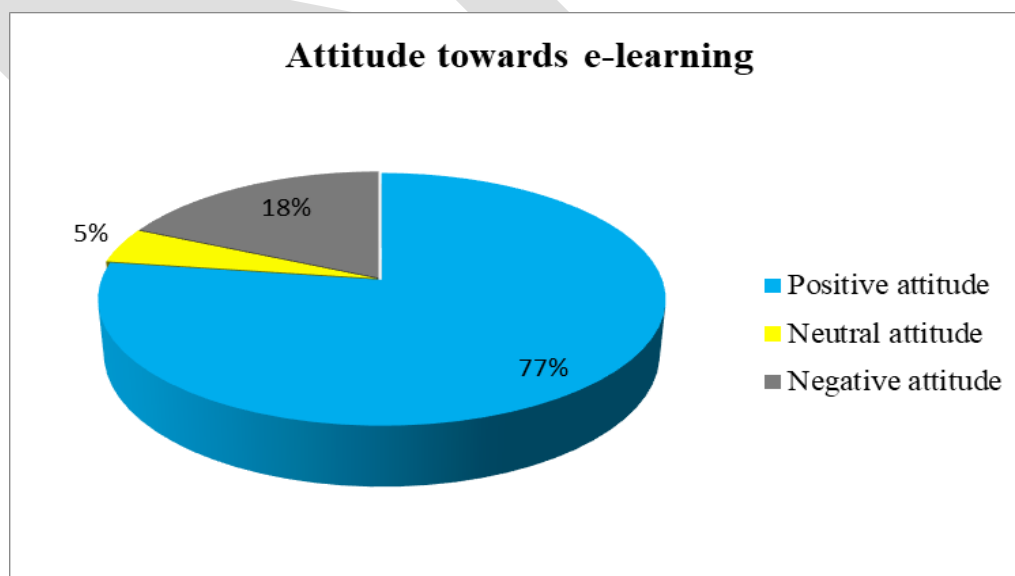
N = 100				
Sr. No.	Range of score	Grade	Frequency	Percentage (%)
1.	1 to 5	Poor	0	0
2.	6 to 10	Average	12	7
3.	11 to 15	Good	139	87
4.	>15	Excellent	9	6

**Fig 1: Bar diagram representing the frequency distribution of knowledge of nursing students towards e-learning.**



**Table 2: Frequency distribution of attitude of nursing students towards e-learning**

Sr. No.	Grade	Frequency	Percentage (%)
1.	Positive attitude	17	77%
2.	Neutral attitude	1	5%
3.	Negative attitude	4	18%



#### IV. DISCUSSION

Due to the COVID-19 pandemic, most educational institutions worldwide have adopted online learning systems as a temporary solution. Governments ordered the closure of these institutions, prompting the shift from face-to-face classroom learning to online education. It is crucial to understand students' perceptions, thoughts, and reactions to this new system, and to evaluate their knowledge, attitudes, problems, needs, and expectations regarding online learning. This study evaluates the knowledge and attitude of students towards online learning by distributing questionnaires and attitude scales. The findings of the study implicated Nursing administration nursing education, industrial platform, Teaching field and research field.

#### V. SUMMARY AND CONCLUSION

World Health Organization (WHO) has declared the pandemic of the novel SARS covid-19 infection and it has now become a major public health challenge worldwide. The current crisis of the pandemic forced the entire world to rely on e-learning for education. The percentage of learners attending e-learning is on rise due to COVID-19. 40.4% in age group of 15-29 years were able to use the internet. More students participate in online discussions than they do in classroom discussions, even introverts 5-73% of students prefer some courses to be fully online post-pandemic. The study concludes that majority of subjects were having good knowledge and positive attitude towards e-learning. The study recommends related research can be carried out on other professional and non-professional courses, can also include assessment of behavioural changes, practice and perception.

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**Conflict of interest:** No conflict of interest to declare.

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# “An exploratory study to assess the knowledge of CHAAYA and MALA-D contraceptive method among female of reproductive age group of 20–45 years in selected urban community area of Pune city.”

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**Abstract:** Family planning has been recognized as a part of maternal and child health services, even though the emphasis on it has been placed only during the recent part. It is a deliberate attempt to space the birth of children to plan the size of the family to ensure that the family is physically and mentally healthy.

**Aim:** To assess the knowledge regarding CHAAYA and MALA-D contraceptive methods among the females of the reproductive age group of 20 – 45 years of selected urban community areas.

**Method and setting:** Quantitative survey design with a Sample size of 200 females in the age group of 20-45 years from the selected community area. A simple random sampling technique was used. A demographic data questionnaire of 7 items and self-structured questionnaire knowledge regarding CHAAYA and MALA-D contraceptive methods were used to collect the data.

**Results:** The study analysis of baseline characteristics was done through the descriptive statistics. It indicates that 56.66% women had good knowledge about CHHAYA, 65.33% women had good knowledge, about MALA-D. 66.66% women had average knowledge about CHHAYA, 54.66% women had average knowledge about MALA-D. 10.00% women had poor knowledge about CHHAYA. 13.33% have poor knowledge about MALA-D.

**Conclusion and discussion:** The study indicates that the majority of women in the community area had average knowledge of both contraceptives. It indicates the need of interventions that will help to enhance knowledge as well as practice of modern contraception. The study will help to understand the females and communities' concepts about family planning. The study underscores the importance of tailored interventions to enhance knowledge and utilization of contraceptives among women in community areas.

**Keywords:** Knowledge, Chaaya, Mala-D, Contraceptive Method, Female of Reproductive Age, Urban Community.

## I. INTRODUCTION

A family is a unit that is dependent on each other. family planning has been recognized as a part of maternal and child health services, even though the emphasis on it has been placed only during the recent part. The concept of contraceptives existed way before the 19<sup>th</sup> century.

Family planning is a deliberate attempt by the pair in the reproductive age group to space the birth of their children and to plan the size of the family by the social, economic, and health conditions to ensure that the family is happy both physically and mentally. Small differences in the family size will make big differences in the birth rate. The difference of only one child per family over ten years. It will have an enormous impact on the population growth. Contraception is essential to preventing unintended pregnancy. While contraceptive use has increased significantly over the past decade, quit and gaps in use remain common. Women cite side effects as the reason for stopping methods. **Renjhen P et. al** conducted A study on knowledge, attitude, and practice of contraception among college students in Sikkim, India. The result of the study showed that a significant number of students had knowledge about family planning and temporary contraceptives like condoms and contraceptive pills but had poor knowledge about permanent methods and Cu-T. Most students thought contraceptives were to be used to prevent unwanted pregnancy and for birth spacing. The most used contraceptives were condoms, followed by combined use of OCP and condoms. They indicated the need to motivate the youth for effective and appropriate use of contraceptives when required.<sup>[1]</sup> **Jabeen M. et. al** conducted a study about knowledge, attitude, and practices of contraception in women of reproductive age. The descriptive cross-sectional survey showed that 56.2% of respondents had heard of some method. While interviewing it is found that samples have given positive responses regarding the use of contraceptives and stated family planning as prohibited in their religion. The use of contraceptives was (30.8%). The practice was more common in grand multipara  $p < 0.0001$ , > 35-year-old

ladies  $p < 0.0001$ , working women  $p < 0.01$  and those with education up to matric and above  $p < 0.001$ . The study concluded that the frequency of contraceptive use is comparatively low despite the high level of awareness.<sup>[2]</sup> **Mubashar H. et. al.** researched the knowledge, attitude, and practice of contraceptives among Saudi Women in the Aseer Region, Saudi Arabia. The cross-sectional and hospital-based study concludes that a significant proportion of respondents have good knowledge about contraception. However, the practice of contraception and compliance is low. The desire for more children is one of the major factor's reasons for the non-use of contraception.<sup>[3]</sup> **Aldabbagh RO, Al-Qazaz HK.** Studied Knowledge and Practice of Contraception Use Among Females of Child-Bearing Age in Mosul, Iraq. A cross-sectional study design disclosed that Iraqi women had good knowledge and positive practices towards birth control methods. Educational level was an important factor in determining the knowledge and positive practices towards contraceptives.<sup>[4]</sup> **Eisenberg DL et. al.** conducted the study about Knowledge of contraceptive effectiveness a cross-sectional analysis of a contraceptive knowledge questionnaire that had been completed by 4144 women. The study demonstrated significant knowledge gaps regarding contraceptive effectiveness and overestimated the effectiveness of pills, patches, rings, and condoms.<sup>[5]</sup> **Gosavi A, Ma Y, Wong H, Singh K.** studied the Knowledge and factors determining the choice of contraception among Singaporean women. A cross-sectional survey of 259 female patients, aged 21–49 years concluded that women in Singapore have poor awareness and knowledge of contraception, especially long-acting reversible methods. More effective ways are needed to educate women about contraceptive methods.<sup>[6]</sup>

## II. METHODOLOGY/DESIGN OF STUDY

The study used a quantitative approach. The study research design was a survey is used design. The study aimed to assess the knowledge regarding CHAAYA and MALA-D contraceptive methods among the females of the reproductive age group of 20 – 45 years in a selected urban community area. The data was collected from a selected urban community area in Pune city. The total sample size was 200 females of the reproductive age group of 20–45 years who have given their consent for the study voluntarily. A simple random sampling technique was adopted to select the samples. The tool included demographic data as section 1 for the demographic profile consists of 7 items and section 2 included a structural questionnaire on knowledge regarding CHAAYA and MALA-D contraceptive method. The tool was validated by the 12 experts of different fields along with a blueprint, objective of study, and evaluation criteria.

## III. RESULTS/ FINDINGS

The analysis of data is divided into 2 sections. Section 1 includes Baseline distribution of the participants according to the demographic variables using frequency and percentage and section 2 includes the level of knowledge CHAAYA and MALA-D contraceptive method among the female of reproductive age group of 20–45 years of selected urban community area. Descriptive statistics (frequency, percentage,) were used to analyse the data.

**Table 1: Baseline distribution of the participants according to the demographic variables using frequency and percentage.**

N=200			
Sr. no.	Demographic variable	Frequency (f)	Percentage (%)
1.	Age of participants		
	20-25	68	13.60%
	26-30	76	15.20%
	31-35	33	6.60%
	36-40	18	3.60%
	41-45	5	1.00%
2.	Education of participant		
	Illiterate	0	0%
	Below 10 <sup>th</sup>	20	8.33%
	10 <sup>th</sup> – 12 <sup>th</sup>	77	12.83%
	Graduation	76	12.66%
	Post – graduation	24	4.00%
	Other	4	4.00%
	<b>Marital status</b>		
	Married	200	100%
	Unmarried	0	0%



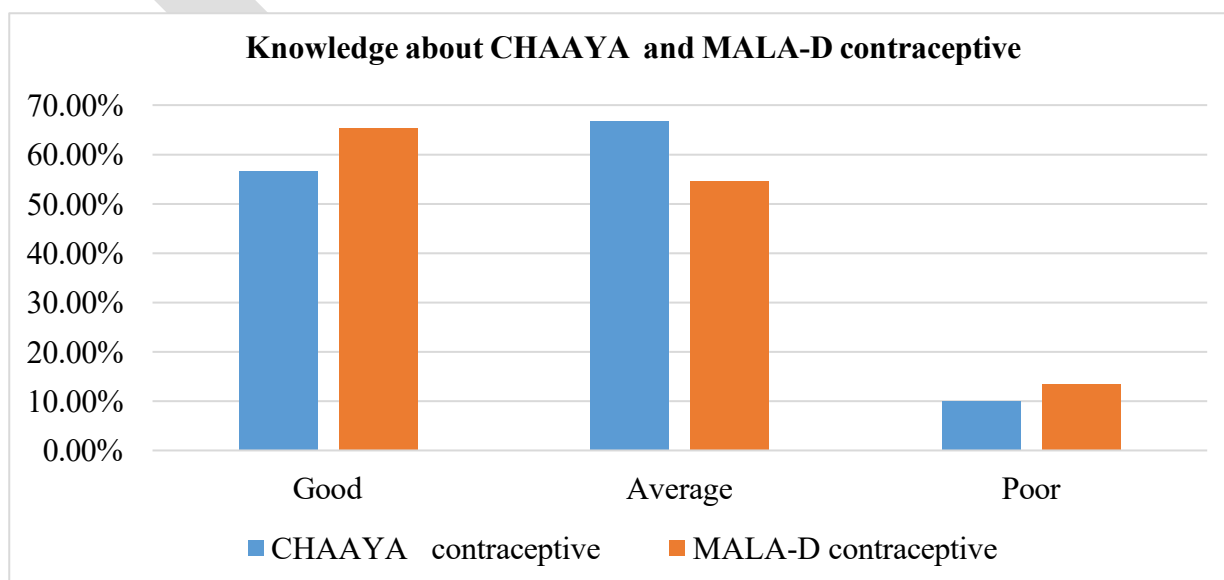
Divorced	0	0%
Widowed	0	0%
<b>Gravida</b>		
Null parity	19	6.33%
Primigravida	87	29.00%
Multi gravida	94	31.33%
<b>Family type</b>		
Nuclear family	127	42.33%
Joint family	68	22.66%
Other	5	1.66%
<b>Income</b>		
10,000-50,000/-	144	48.00%
50,000-1,00,000/-	48	16.00%
More than 1,00,000/-	8	2.66%

The finding in Table 1 showed that 13.60% of females belong to the 20-25 age group, 15.20% belong to 26-30 age group, 6.60% belongs to the 31-35 age group, 3.60% belong to the 36-40 age group and 1.00% belongs to 41-45 age group. 0% of females are illiterate, 8.33% are below 10th, 12.83% are 10th – 12th, 12.66% are Graduates, 4.00% are Postgraduate and 0.66% are others. 100% are married, It also shows that 6.33% are Nulliparous, 29.00% are primigravida, and 31.33% are multi-gravida. The type of family of the urban community area in the female showed that 42.33% had nuclear family, 22.66% had joint family, and 1.66% had other (single person). 48.00% belongs to the 10,000-50,000/- income range, 16.00% belongs to the 50,000-1, 00,000/- income range and 2.66% belongs to the more than 1, 00,000s/- income range.

**Table 2:** The level of knowledge of CHAAYA and MALA-D contraceptive methods among the females of the reproductive age group of 20–45 years of selected urban community areas.

N=200

Sr.no	Matrix	CHAAYA contraceptive		MALA-D contraceptive	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
1.	Good	85	56.66%	98	65.33%
2.	Average	100	66.66%	82	54.66%
3.	Poor	15	10.00%	20	13.33%



**Graph 1:** The level of knowledge of CHAAYA and MALA-D contraceptive methods among the females of reproductive age group of 20–45 years of selected urban community area.

The above table and graph compare the knowledge of CHHAYA and MALA-D contraceptive methods of the urban community area in the female. It indicates that 56.66% have good knowledge about CHHAYA, 65.33% have good knowledge about MALA-D, 66.66% have average knowledge about CHHAYA, 54.66% have average knowledge about MALA-D and 10.00% have poor knowledge about CHHAYA. 13.33% have poor knowledge about MALA-D.

#### IV. DISCUSSION

The current study findings showed that the demographic data for the study is well distributed. The majority of females belonged to the age group of 20-30 years. They were educated and 100% were married. It also showed that most females were primigravida and multi-gravida. The majority belonged to nuclear and joint families. The income range was also varied. The comparison of the knowledge on CHHAYA and MALA-D contraceptive methods of the urban community area in the females indicated that approximately half samples have good knowledge about both contraceptives. Based on findings and experiences while conducting the study following recommendation are offered for future research. Developing a health education for spreading awareness about CHHAYA and MALA-D contraceptives. Further research is needed to investigate the women who complain side effects of contraceptives. Determine the cause of contraceptives CHHAYA and MALA-D side effects. A qualitative study can be conducted to assess the knowledge and practice for CHHAYA and MALA-D contraceptives.

#### V. SUMMARY AND CONCLUSION

Many females in the study had good to average knowledge of CHAAYA and MALA-D as contraceptive options, primarily through healthcare providers and word of mouth. Challenges included misconceptions about contraceptive methods, limited access to specialized services, and affordability concerns. Recommendations included targeted educational campaigns, healthcare provider training, improved accessibility, and addressing cultural barriers to enhance contraceptive uptake. The study underscores the importance of tailored interventions to enhance knowledge, access, and utilization of CHAAYA and MALA-D contraceptives among women in urban Pune.

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# “The impact of mobile phone use on children and adolescents: behavioural, emotional, and academic consequences”

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## Abstract

*This review examines the impact of mobile phone use on children and adolescents, highlighting behavioral, emotional, and academic consequences. Research consistently shows that excessive screen time leads to issues such as irritability, inattention, and social withdrawal. Increased use of mobile devices is also linked to poor academic performance and mental health concerns, including anxiety and depression. Parental monitoring and balanced school policies are essential for minimizing negative effects. The review calls for further research into interventions to mitigate these outcomes.*

**Keywords:** mobile phone use, children, adolescents, behavioral changes, emotional health, academic performance, screen time, mental health, parental involvement.

## I. INTRODUCTION

The widespread use of mobile phones among children and adolescents raises concerns about their effects on development. Originally designed for communication, mobile phones now serve various functions, including gaming and social media. This review explores the effects of mobile phone usage on children's behavior, mental health, and academic performance, stressing the need for balanced use and further investigation into potential interventions <sup>[2]</sup>.

## II. METHOD

This review includes studies published from 2010 to 2025, focusing on mobile phone use among youth. Research from various countries, including India, Japan, and Iran, was analyzed. The studies investigated aspects such as screen time, content exposure, and the effects on behavioral changes, academic performance, and mental health, along with the role of parental and school involvement <sup>[3]</sup>.

## III. RESULTS

The reviewed studies consistently show that excessive mobile phone use leads to behavioral problems like irritability, hyperactivity, and social withdrawal. Research from Japan and India found that prolonged screen time negatively affects children's behavior and academic achievement. Additionally, studies in Iran and China suggest a link between mobile phone addiction and mental health issues such as anxiety and depression. Parental control and school policies that manage screen time were found to help reduce these negative effects <sup>[4][5]</sup>.

## IV. DISCUSSION

The increase in mobile phone use among children and adolescents is a double-edged sword. On the one hand, mobile phones offer educational benefits and opportunities for social interaction. However, the studies reviewed consistently highlight that excessive use contributes to various problems. Behavioral issues like irritability, hyperactivity, and inattention can be directly correlated with high screen time. In terms of academic performance, research shows a negative relationship between prolonged mobile phone use and student achievement. This suggests that while technology is an indispensable tool in modern education, excessive use can detract from academic focus and engagement.

Another critical area of concern is mental health. The reviewed studies point to an increase in anxiety, depression, and social withdrawal among children and adolescents who engage in excessive mobile phone use. The blue light emitted from screens, lack of face-to-face social interaction, and exposure to harmful content online are factors that may contribute to these mental health issues.

Despite the negative outcomes, parental monitoring and appropriate school policies can mitigate these effects. Active parental involvement, such as setting limits on screen time and monitoring content, plays a crucial role in reducing the adverse consequences of mobile phone use. Similarly, schools that enforce balanced technology policies, such as limiting mobile phone use during school hours, can help foster healthier relationships with technology.

## V. CONCLUSION

Excessive mobile phone use among children and adolescents is associated with behavioral, emotional, and academic challenges. While the link between screen time and negative outcomes is clear, further research is needed to understand the long-term effects. It is essential for parents and schools to monitor and regulate mobile phone use, promoting a balanced approach to technology that supports healthy development. Future studies should focus on effective interventions and preventative strategies <sup>[6]</sup>.

**Conflict of interest: No conflict of interest to declare.**

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# “The Interplay of Anger and Substance Abuse: A Review of Adolescent Behavioral Patterns”

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## Abstract

*Anger and substance use are tightly connected behavioral patterns, especially among teenagers. The failure to manage anger can lead to dangerous actions, such as substance misuse, which intensifies emotional instability. This review examines the connection between expressing anger and the potential for substance abuse in adolescents, emphasizing contributing factors, mental health implications, and intervention approaches.*

## I. INTRODUCTION

### Anger Expression and Its Association with Substance Abuse

Anger can manifest in various forms, including outward aggression, suppression, and internalized distress. Studies indicate that adolescents with poor anger management skills are more likely to engage in substance abuse as a coping mechanism<sup>1,2</sup>. The intensity and frequency of anger episodes correlate with the likelihood of engaging in risky behaviors, including drug and alcohol use.<sup>3</sup>

**Mathew B** pointed out that a common trigger for adolescent substance use is difficulty in emotional regulation, peer pressure, and stressors related to academic pressure or family conflict. Such factors may contribute to emotional distress, making adolescents vulnerable to substance abuse.<sup>4</sup>

### Factors contributing to the link between anger and substance abuse include:

**Emotional Dysregulation:** Adolescents who struggle with emotional control often turn to substances to alleviate distress and achieve temporary relief from negative emotions.<sup>5</sup>

**Impulsivity and Risk-Taking Behaviors:** Poor impulse control and risk-seeking tendencies make adolescents more vulnerable to experimenting with substances as a response to frustration or anger.<sup>6</sup>

**Peer Influence and Environmental Factors:** Exposure to peer groups that normalize substance use can reinforce maladaptive coping strategies, increasing the likelihood of substance dependence among adolescents with high levels of anger.<sup>7</sup>

**Mental Health Disorders:** Co-occurring mental health conditions, such as depression and anxiety, can intensify anger issues and increase susceptibility to substance abuse.<sup>8</sup>

## II. METHODOLOGY

This review adopts a systematic approach to examining the interplay between anger and substance abuse in adolescents. Studies were selected based on their relevance to adolescent behavioral patterns, emotional dysregulation, and substance use. The inclusion criteria consisted of peer-reviewed journal articles published within the past decade that explored anger expression, coping mechanisms, and substance use. Meta-analyses and longitudinal studies were also considered to assess the long-term effects of anger on substance abuse tendencies.

## III. RESULTS

Findings from the reviewed articles indicate a significant correlation between anger expression and substance abuse. Adolescents who exhibit poor anger management are at a higher risk of engaging in substance use as a maladaptive coping mechanism.<sup>9</sup> Emotional dysregulation was identified as a key factor influencing substance dependence, with heightened impulsivity and risk-taking behaviors leading to increased substance use.<sup>10</sup>



Neurobiological studies suggest that prolonged substance use alters brain function, impairing decision-making abilities and increasing aggression.<sup>11</sup> Adolescents with co-occurring mental health conditions, such as anxiety and depression, demonstrated a higher propensity for substance dependence, further intensifying emotional instability.<sup>12</sup>

#### IV. DISCUSSION

The findings underscore the complex relationship between anger expression and substance abuse, emphasizing the role of emotional dysregulation and environmental influences. Adolescents with high levels of anger are more susceptible to using substances as a means of coping with frustration and emotional distress.<sup>13</sup> The results align with studies demonstrating that poor impulse control and risk-seeking behaviors are significant predictors of substance use disorders.<sup>14</sup>

**Wang L** highlighted that childhood adversity, including exposure to violence or neglect, can significantly impact emotional regulation and lead to higher risks of substance abuse later in life.<sup>15</sup> This further supports the argument that unresolved anger and emotional trauma play a crucial role in shaping adolescent behavioral patterns. School-based prevention programs and family support systems play a crucial role in mitigating these risks, emphasizing the need for targeted interventions that address both anger management and substance abuse prevention.<sup>16</sup> Mindfulness-based strategies and cognitive-behavioral therapy (CBT) are effective in reducing anger-driven substance use by promoting emotional regulation and alternative coping mechanisms.<sup>17</sup>

#### V. CONCLUSION

This review highlights the intricate connection between anger and substance abuse among adolescents, emphasizing the importance of early intervention strategies. Addressing emotional dysregulation through structured anger management programs, CBT, and mindfulness-based interventions can significantly reduce the risk of substance dependence. Future research should explore integrated treatment approaches that combine anger management and substance abuse prevention for holistic adolescent well-being. By implementing evidence-based strategies at the community, school, and family levels, the cycle of anger-induced substance abuse can be effectively mitigated.

**Conflict of interest: No conflict of interest to declare.**

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# “Implication of Psychological Well-Being in the Nursing Field: A Research Overview”.

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## Abstract

*Psychological well-being (PWB) is critical for nurses, as it directly impacts their work performance, patient care, and overall health. This paper explores the implications of PWB in the nursing field, emphasizing its effects on both individual nurses and the healthcare system. The study investigates how psychological well-being affects nurses' stress levels, job satisfaction, mental health, and productivity. It also explores strategies to promote PWB in nursing professionals, such as organizational support, mindfulness interventions, and professional development. A thorough understanding of PWB's implications can inform policies and practices to improve nurses' working conditions and mental health, ultimately enhancing patient care quality.*

## I. INTRODUCTION

Nursing is a demanding profession, often associated with long working hours, emotional labour, and exposure to high-pressure situations, which can negatively affect nurses' mental health. Psychological well-being refers to the overall mental state of an individual, characterized by positive emotional functioning, life satisfaction, and a sense of purpose. In the nursing profession, PWB is essential for preventing burnout, enhancing job satisfaction, and improving the quality of care delivered to patients.

Despite the growing recognition of mental health issues within healthcare systems, there is a gap in understanding how PWB impacts the nursing profession. Nurses who experience high levels of stress, anxiety, or depression may struggle to provide optimal patient care, and their own well-being may deteriorate. Conversely, promoting PWB in nursing can lead to improved resilience, reduced absenteeism, and enhanced job satisfaction.

### Psychological well-being in nursing

Psychological well-being in nursing involves a combination of factors, including emotional resilience, self-efficacy, social support, and a positive outlook on life. Nurses who maintain high levels of PWB demonstrate greater resilience to workplace stressors, which is vital in managing the emotional toll of patient care. Furthermore, a positive sense of PWB can lead to improved professional competence and patient outcomes.

### Factors affecting nurses' PWB:

**Workplace Stress:** The high-stress environment in healthcare settings, due to patient care demands, time pressures, and understaffing, can erode nurses' mental well-being. **Emotional Labor:** Nurses often experience emotional exhaustion from interacting with patients who are suffering, which can lead to burnout if not managed effectively.

**Work-Life Balance:** The inability to balance work and personal life affects nurses' mental health, leading to anxiety and depression. **Job Satisfaction:** Nurses who feel valued in their workplace are more likely to experience positive psychological well-being, which correlates with better care delivery.

## II. IMPLICATIONS FOR NURSING PRACTICE

**Impact on Patient Care:** Nurses' mental health is integral to the care they provide. Nurses with high PWB are more empathetic, compassionate, and patient-centred in their approach. Conversely, nurses with low PWB may become disengaged or display lower empathy, negatively affecting patient satisfaction and clinical outcomes.

**Nurse Retention:** High levels of stress and burnout have been linked to high turnover rates in nursing. Promoting psychological well-being can improve nurse retention, ensuring that experienced professionals remain in the workforce and continue to contribute to the healthcare system. **Mental Health of Nurses:** Chronic stress and poor psychological well-being can lead to various mental health issues such as depression, anxiety, and burnout. These conditions not only affect the nurse's life but can also increase the likelihood of medical errors, which can be detrimental to patient safety.

**Job Satisfaction and Performance:** Nurses who report higher PWB tend to have better job satisfaction and higher performance levels. A satisfied nurse is more likely to provide quality care, demonstrate greater commitment to their role, and have a more positive relationship with colleagues.

### Strategies to enhance psychological well-being in nurses

**Mindfulness-Based Interventions:** Research has shown that mindfulness practices can reduce stress and improve emotional resilience. Introducing mindfulness-based stress reduction (MBSR) programs can be beneficial for nurses dealing with workplace challenges.

**Organizational Support:** Healthcare organizations must recognize the importance of mental health support for nurses. This can include offering counseling services, fostering a supportive workplace culture, and ensuring adequate staffing levels to prevent burnout.

**Peer Support Networks:** Peer support plays a critical role in improving psychological well-being. Encouraging nurses to build strong, supportive relationships with colleagues can help buffer against stress and provide emotional support during difficult times.

**Professional Development:** Providing nurses with opportunities for professional growth and continuing education can enhance their sense of competence and personal fulfillment, leading to higher levels of psychological well-being.

**Workplace Flexibility:** Implementing policies that promote work-life balance, such as flexible shifts or adequate vacation time, can help reduce burnout and improve nurses' overall psychological health.

### III. REVIEW OF LITERATURE: IMPLICATION OF PSYCHOLOGICAL WELL-BEING IN THE NURSING FIELD

Psychological well-being (PWB) in nursing is a critical area of research due to its direct influence on job satisfaction, quality of care, nurse retention, and overall health of healthcare systems. The profession, often characterized by high stress, emotional labor, and long working hours, places considerable demands on nurses, making PWB an essential factor to ensure both personal and professional well-being. This literature review synthesizes research regarding the implications of PWB in the nursing field, highlighting its importance for nurses' mental health, patient outcomes, job performance, and retention.

#### Psychological Well-Being and Nurse Mental Health

The concept of psychological well-being in nursing primarily focuses on mental health, life satisfaction, emotional resilience, and coping mechanisms. Nurses who experience positive PWB are more resilient to the emotional and physical stress of their work. In contrast, nurses with poor psychological well-being are at a higher risk for burnout, anxiety, and depression, which significantly affects both their health and their ability to care for patients (Aiken et al., 2002). Burnout, a key outcome of chronic stress, has been extensively studied in nursing. Studies show that nurses who experience high levels of burnout exhibit emotional exhaustion, depersonalization, and reduced personal accomplishment, leading to lower quality of care and higher medical errors (McHugh & Stimpfel, 2012). Aiken et al. (2002) argue that high nurse burnout correlates with poor patient outcomes, indicating a direct relationship between the mental health of nurses and the quality of care delivered.

#### PWB and Nurse Job Performance

Nurses' psychological well-being has significant implications for their job performance. According to West and Dawson (2012), nurses who maintain high levels of PWB exhibit better job performance, including greater empathy, organizational commitment, and professional competence. High PWB in nurses is associated with more effective patient care and improved teamwork, as well as reduced absenteeism and turnover rates. Conversely, poor PWB often leads to disengagement, lowered productivity, and absenteeism. McHugh and Stimpfel (2012) found that nurses suffering from poor mental health are more likely to experience job dissatisfaction, which negatively affects their work performance. A reduced sense of accomplishment and compassion can lead to disengagement from patient care, as well as an increased risk of medical errors.

#### Psychological Well-Being and Nurse Retention

Nurse retention is a major concern in healthcare systems worldwide, and psychological well-being plays a significant role in this context. Aiken et al. (2002) observed that high levels of stress and burnout contribute to high turnover rates among nurses. Nurses who feel emotionally drained and unsupported in their work environment are more likely to leave the profession. This turnover has detrimental effects on the healthcare system, as it leads to a loss of experienced nurses and creates instability within healthcare teams. Nurses with good psychological well-being, on the other hand, are more likely to remain in their positions and continue providing high-quality care. McHugh and Stimpfel (2012) found that nurses who report feeling supported by their organizations and who have access to resources for managing mental health and stress are more likely to stay in the profession. Thus, promoting PWB not only benefits individual nurses but also helps retain a stable and experienced workforce.

## PWB and Patient Care Quality

The mental health of nurses is directly correlated with the quality of patient care. Nurses who experience higher levels of psychological well-being are more empathetic, compassionate, and patient-centered in their approach to care. A positive outlook and emotional resilience help nurses to manage the emotional challenges of caring for patients, allowing them to provide better quality care (Aiken et al., 2002). Research has shown that low PWB, however, can lead to a reduction in the quality of patient care. Nurses with poor mental health are at a higher risk for making medical errors, providing less empathetic care, and exhibiting lower engagement with patients. West and Dawson (2012) argue that improving nurses' mental well-being is essential not only for their own health but also for the health and safety of patients. Poor mental health among nurses can result in neglectful care and can diminish patient satisfaction and recovery outcomes.

## Workplace Stress and Organizational Support for PWB

Workplace stress is a major factor influencing psychological well-being in nursing. The high-stress nature of the job, including heavy workloads, time pressures, and exposure to suffering and death, exacerbates the risk of burnout and mental health issues among nurses (Aiken et al., 2002). McHugh and Stimpfel (2012) emphasize that inadequate staffing, lack of autonomy, and high patient-to-nurse ratios are primary stressors that contribute to poor PWB in nursing. These stressors not only affect nurses' mental health but also increase the likelihood of medical errors and poor patient care. Organizational support plays a key role in enhancing PWB. Research has shown that when healthcare organizations prioritize mental health resources, provide counseling services, and ensure sufficient staffing levels, nurses experience lower levels of burnout and stress (Laishangbam et al., 2022). Furthermore, fostering a positive organizational culture, where nurses feel valued and supported, enhances their PWB and leads to improved job satisfaction and retention.

## IV. CONCLUSION

The psychological well-being of nurses is not just a personal issue but one with significant implications for the healthcare system and patient care. As the healthcare landscape continues to evolve, it is essential to prioritize the mental health of nurses through interventions that promote psychological well-being. By fostering a supportive environment and providing resources to improve mental health, the nursing profession can improve job satisfaction, reduce burnout, and ultimately enhance patient outcomes. As evidence continues to show the benefits of promoting PWB, healthcare systems must incorporate these strategies into their policies and practices. This paper provides a broad overview of how psychological well-being influences nursing practice, as well as the importance of nurturing it within healthcare organizations to ensure better nurse retention, performance, and patient care.

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# "Preventing malnutrition: A comprehensive review of community-based nutritional interventions"

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## Abstract

Adolescent malnutrition is a significant public health issue in low- and middle-income countries (LMICs), with lasting impacts on health and development. Community-based interventions offer potential solutions to address various forms of malnutrition and improve adolescent health outcomes. However, the effectiveness and implementation of these interventions remain underexplored. This scoping review aims to synthesize evidence on community-based interventions targeting multiple forms of malnutrition in adolescents aged 10–19 years in LMICs. A comprehensive search will be conducted across multiple databases from 2000 to July 2023, focusing on randomized controlled trials and quasi-experimental studies. Interventions such as micronutrient supplementation, nutrition education, feeding programs, physical activity, and environmental changes will be included. Data extraction will be performed by two independent reviewers, and risk of bias will be assessed. Results will be reported according to the PRISMA Extension for Scoping Reviews guidelines. Findings will be disseminated through peer-reviewed publications and presentations at conferences.

**Keywords:** Adolescent, Nutrition & Dietetics, Health Education, Systematic Review, Anaemia.

## I. INTRODUCTION

Childhood malnutrition remains a significant public health issue in low- and middle-income countries (LMICs), with noticeable disparities in undernutrition across different regions and countries. Recent studies have shown that malnutrition during childhood not only affects physical health and growth but also impacts cognitive development and future productivity, which can lead to long-term economic consequences. Addressing hunger and malnutrition has therefore been prioritized as a key goal in the Sustainable Development Goals (SDGs), with a specific focus on chronic childhood malnutrition.

There's a growing body of evidence highlighting the long-term health and economic benefits of improving nutrition in early childhood, which is why most interventions focus on the early stages of a child's life. However, while tackling childhood undernutrition can enhance individual well-being and drive economic growth, it's crucial to evaluate the cost-effectiveness and benefits of different approaches in various contexts. The causes of child malnutrition are complex, involving a range of immediate, underlying, and basic factors, and the interactions between them. Nutrition-specific interventions that target these immediate causes of malnutrition are being implemented in various settings to help improve child nutrition. Research has shown that increasing the coverage of these interventions is vital to reducing undernutrition and its negative impacts.

Community-Based Nutritional Interventions Various community-based programs have shown success in addressing malnutrition through different approaches.

## II. Nutrition Education Programs

Since 1971, Taiwan's death certification system has been computerized, with cancer being the leading cause of death for decades. Cancer-related malnutrition can lead to infections, slow wound healing, muscle weakness, and skin breakdown. Nutritional support is essential for patients unable to maintain weight due to reduced appetite. Tailored strategies to identify at-risk patients are crucial for effective support and reducing cancer complications. Routine malnutrition screening should be implemented for high-risk groups. Malnutrition severity in cancer patients depends on tumour type, disease stage, and treatment. Common tools for detecting malnutrition in clinical practice include Subjective Global Assessment (SGA), Mini Nutritional Assessment (MNA), Short Form MNA (SF-MNA), Nutrition Risk Screening (NRS), and Malnutrition Universal Screening Tool (MUST).

## Food Security Initiatives

Access to nutritious food was a fundamental factor in preventing malnutrition. Food security initiatives that ensured consistent access to affordable, nutritious food reduced malnutrition, particularly in low-income communities. Programs

that supported local food production, such as community gardens or agricultural training, demonstrated positive results in improving nutritional intake. Micronutrient Supplementation.<sup>1</sup>

Micronutrient deficiencies, such as iron, vitamin A, and iodine, are prevalent causes of malnutrition. Supplementation programs that provide essential nutrients have been effective in reducing deficiencies and promoting better health, particularly in children and pregnant women. Fortified foods, such as iodized salt and vitamin A-enriched oils, also contribute to the prevention of malnutrition in larger populations.<sup>2</sup>

### Breastfeeding Promotion

Breastfeeding is often a highly emotional and debated topic. International health organizations recommend exclusive breastfeeding for the first 4–6 months, followed by partial breastfeeding into the second year, to improve infant health and reduce the risk of malnutrition and infections. But how well do these recommendations align with scientific evidence? Are they overly simplified for emotional or public health reasons? Breastfeeding is believed to benefit infants because breast milk provides the perfect balance of nutrients, supports the development of the infant's gut and immune system, and helps prevent pathogen exposure. However, some contradictory findings exist. In environments with low contamination, breastfed infants sometimes show slower growth compared to those fed formula. Additionally, partial breastfeeding in such settings does not seem to cause more gut damage than exclusive breastfeeding, suggesting that promoting gut development may be more important than simply avoiding pathogens from other foods.<sup>7</sup>

### III. Factors Contributing to Effective Interventions

In this study, over half of the malnourished children were aged 6-12 months, a period coinciding with weaning, suggesting that improper weaning or complementary feeding may contribute to malnutrition. A similar pattern was found in a study in Enugu, Nigeria. Our analysis also showed that children aged 24 months or younger were more likely to be malnourished, highlighting the vulnerability of this age group. This period offers a key opportunity for intervention, which is the focus of the Scaling Up Nutrition (SUN) movement, aiming to improve nutrition during pregnancy and early childhood through coordinated, multi-sectoral efforts.<sup>6</sup>

### Implications for Global Health

The success of community-based interventions in preventing malnutrition had significant implications for global health. As malnutrition contributed to a wide range of health issues, including stunted growth, cognitive impairments, and increased susceptibility to infections, addressing these issues at the community level had substantially improved public health outcomes. Moreover, these interventions had contributed to reducing the economic burden of malnutrition-related diseases and improving overall quality of life as per Tiffany E Chao.

### Intervention Strategies

As Nickel S and Knesebeck O, to enhance the effectiveness of community-based interventions, the following strategies were recommended: **Integrating Health and Nutrition Education into School Curricula:** Teaching children and young adults about the importance of nutrition from an early age instilled long-term healthy habits. **Promoting Community Partnerships:** Collaboration between local governments, non-governmental organizations (NGOs), and community groups led to more effective and sustainable programs. **Monitoring and Evaluation:** Regular assessment of community nutrition programs ensured that they were meeting their goals and allowed for modifications to improve effectiveness.

### IV. CONCLUSION

Community-based nutritional interventions are vital in preventing malnutrition, particularly in vulnerable populations. By focusing on education, food security, supplementation, and breastfeeding promotion, these interventions can address the root causes of malnutrition and improve health outcomes. As Beggs B et al, future research should focus on refining these interventions and exploring new strategies to reduce malnutrition globally.

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