# A Multidimensional Approach to Holistic Health: The Role of Agriculture, Sports, and Diagnostics in Gujarat

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## 1. Abstract

Holistic health requires integration of preventive, lifestyle, environmental, and diagnostic determinants rather than isolated biomedical intervention. This study explores a multidimensional framework linking organic agriculture, physical activity, and preventive diagnostics in Gujarat, India. A cross-sectional survey (n = 144) assessed lifestyle patterns, dietary habits, preventive practices, alternative health beliefs, and disease prevalence. Results revealed high community burden of lifestyle-related diseases, particularly diabetes (38%), hypertension (41%), and cardiovascular conditions (19%), alongside infectious diseases such as malaria and tuberculosis (12%). Data interpretation demonstrates a significant overlap between poor dietary transitions, sedentary behaviour, and late diagnostic practices. Literature evidence supports the biological mechanisms linking agriculture and nutrition, physical activity and chronic disease reduction, and inflammation-driven disease progression. Findings emphasise that organic food systems, structured physical activity, and accessible diagnostics function synergistically in reducing metabolic and infection-driven morbidity. This integrated approach aligns with the One Health and Sustainable Development Goals frameworks. The study proposes a Gujarat-based preventive health model integrating agriculture reform, sports infrastructure, and early screening systems to reduce chronic disease progression and secondary cancer and other disease risk.

**Keywords**: Holistic health, Organic agriculture, Physical activity, Diagnostics, Gujarat, Chronic disease prevention

## 2. Introduction

Global health transitions are shifting from infectious to lifestyle-driven non-communicable diseases (NCDs). Evidence indicates that 90-95% of chronic diseases and cancers are influenced by environmental and lifestyle factors (Anand et al., 2008). Agriculture determines diet quality, exposure to chemicals, and microbial risks (WHO, 2020). Physical inactivity contributes to a 30-40% increased cardiovascular risk (Lee et al., 2012). Diagnostics serve as the critical bridge between risk detection and disease prevention.

Gujarat represents a mixed epidemiological profile of metabolic, infectious, and environmentally mediated diseases. The state is undergoing rapid urbanisation, dietary transitions, and lifestyle changes that increase the prevalence of metabolic syndrome, diabetes, and cardiovascular diseases. At the same time, infectious diseases such as malaria and tuberculosis remain endemic, creating a dual burden. This study integrates agriculture, sports, and diagnostics within a unified preventive health framework. It emphasises the need for organic agriculture to reduce chemical exposures, structured physical activity to counter sedentary lifestyles, and preventive diagnostics to enable early detection of chronic and infectious diseases.

### a. Objectives

- To develop an integrated health and wellness framework leveraging agriculture, diagnostics, and physical activity.
- To assess lifestyle patterns, dietary habits, preventive practices, and disease prevalence in Gujarat.
- To propose a sustainable business and research model for preventive healthcare.

**b. Rationality of Study:** The study is rationalised by the high prevalence of lifestyle diseases in Gujarat, the cultural trust in traditional diets, and the weak adoption of preventive diagnostics. Integrating agriculture, sports, and diagnostics provides a holistic solution.

**c. Scope of Study:** The study is limited to 144 participants in Gujarat, primarily youth and students. Results may not generalise to all demographics. Financial and infrastructural barriers restrict preventive adoption, while cultural beliefs may skew responses. Despite these limitations, the findings highlight critical behavioural gaps and provide a foundation for designing scalable, community-based preventive health models (Lee et al., 2012; Tilman & Clark, 2014).

**Hypotheses:** Alignment of Objectives with Hypotheses

**Objective 1: Integrated Framework (Agriculture, Physical Activity, Diagnostics)**

- **H1:** Disconnect between valuing traditional diets and preventive practices.
- **H4:** Synergy of fermented foods + exercise reduces diabetes/hypertension.

**Objective 2: Assess Lifestyle, Diet, Preventive Practices, and Disease Prevalence**

- **H2:** Trust in medical innovation is mediated by cultural/spiritual beliefs.
- **H3:** Financial barriers outweigh physical access barriers.

## 3. Background of Study

The concept of holistic health has evolved significantly in recent decades, moving beyond the traditional biomedical model to encompass lifestyle, environmental, and socio-cultural determinants of disease. Globally, the epidemiological transition has shifted the burden of illness from infectious diseases to non-communicable diseases (NCDs), such as diabetes, hypertension, cardiovascular disorders, and cancer. Evidence suggests that 90-95% of chronic diseases and cancers are influenced by modifiable lifestyle and environmental factors, while only 5-10% are genetically determined (Anand et al., 2008). This highlights the importance of preventive strategies that address diet, physical activity, and early diagnostics.

Agriculture plays a foundational role in shaping health outcomes. Modern agricultural intensification has improved food security but has also introduced risks through pesticide exposure, processed food consumption, and biodiversity decline. These transitions have contributed to rising rates of obesity, diabetes, and cardiovascular diseases (Tilman & Clark, 2014; Hu, 2011). In Gujarat, dietary shifts toward refined carbohydrates and edible oils mirror national trends, creating metabolic vulnerabilities. At the same time, cultural trust in traditional diets and remedies remains strong, offering opportunities for integrating organic and functional foods into preventive health models.

Physical activity is another critical determinant. Sedentary lifestyles, particularly among youth, have been linked to increased cardiovascular risk and metabolic syndrome. Regular exercise reduces the risk of type 2 diabetes by 40-60% and cardiovascular disease by 30-40% (Lee et al., 2012; Booth et al., 2012). In Gujarat, where urbanisation has reduced community-level physical activity, structured interventions such as yoga, sports, and fitness hubs are essential to counteract sedentary behaviour.

Diagnostics serve as the operational bridge between exposure and intervention. Early detection of metabolic abnormalities, infections, and pre-cancerous lesions can significantly reduce morbidity and mortality (WHO, 2020). However, in Gujarat, preventive screening remains weak, with most individuals seeking medical care only when symptomatic. This reactive approach delays intervention and increases disease progression risk.

The dual burden of NCDs and infectious diseases in Gujarat underscores the need for a multidimensional preventive framework. Integrating agriculture, physical activity, and diagnostics offers a synergistic model that addresses both metabolic and infection-driven morbidity. Such an approach aligns with the **One Health framework**, which emphasises the interconnectedness of human, environmental, and animal health. It supports the **Sustainable Development Goals (SDGs)** by promoting well-being, reducing inequalities, and fostering sustainable food systems.

## 4. Literature Review

Holistic health is increasingly conceptualised as a multidimensional construct integrating biological, environmental, behavioural, and socio-economic determinants of disease. Contemporary evidence suggests that only 5-10% of cancers are genetically determined, whereas 90-95% arise from modifiable factors including chronic diseases, infections, environmental exposures, and lifestyle behaviours (Anand et al., 2008). Central to this relationship is chronic inflammation, primarily mediated through activation of the NF-κB signalling pathway, which promotes cellular mutation, proliferation, angiogenesis, and apoptosis resistance (Karin, 2006). This understanding has shifted public health emphasis from treatment-centric models toward preventive, systems-based frameworks.

Agriculture represents the upstream determinant of nutrition, exposure risk, and ecological balance. While agricultural intensification has improved food security, it has simultaneously introduced chemical exposures, biodiversity decline, and dietary transitions toward refined carbohydrates, processed meats, and ultra-processed foods (Tilman & Clark, 2014). Such dietary patterns significantly increase the prevalence of obesity, diabetes, cardiovascular diseases, and

cancer (Hu, 2011). Mechanistically, high-glycaemic diets and saturated fats induce insulin resistance, oxidative stress, and chronic low-grade inflammation, recognised contributors to tumour initiation and metabolic syndrome (Hotamisligil, 2006).

In addition, agricultural chemical exposures-including pesticides, herbicides, and persistent environmental contaminants-have been associated with endocrine disruption, neurotoxicity, and carcinogenic outcomes (Mostafalou & Abdollahi, 2013). Foodborne contaminants such as aflatoxins, nitrosamines, heterocyclic amines (HCAs), and polycyclic aromatic hydrocarbons (PAHs) are strongly linked to hepatic, gastric, and colorectal cancers (Wild & Gong, 2010). Furthermore, agricultural practices influence zoonotic transmission and antimicrobial resistance pathways, contributing to infection-related cancers caused by HBV, HCV, HPV, and *H. pylori* (Plummer et al., 2016). These findings highlight agriculture as both a protective and pathogenic determinant of health.

Physical activity (PA) functions as a critical biological regulator counteracting these risks. Regular PA enhances insulin sensitivity, improves lipid metabolism, increases mitochondrial density, and strengthens endothelial function (Booth et al., 2012). Epidemiological evidence demonstrates a 40-60% reduction in the risk of type 2 diabetes and a 30-40% reduction in the risk of cardiovascular disease among physically active individuals (Lee et al., 2012). Exercise also exerts anti-inflammatory effects by suppressing pro-inflammatory cytokines and inhibiting NF-κB signalling, thereby reducing breast and colorectal cancer risk by approximately 20-30% (Friedenreich et al., 2016). Additionally, PA enhances neurocognitive function through increased brain-derived neurotrophic factor (BDNF) and reduces depression and anxiety prevalence (Pedersen & Saltin, 2015). In rapidly urbanising regions such as Gujarat, where sedentary lifestyles are increasing, structured community-level sports and physical activity interventions are essential preventive strategies.

The literature further supports the concept of disease-driven carcinogenesis. Chronic conditions, including obesity, diabetes, cirrhosis, and persistent infections, create sustained inflammatory microenvironments that promote DNA damage and malignant transformation (Coussens & Werb, 2002). Infection-related cancers account for approximately 15-20% of global cancer deaths, reinforcing the need for vaccination, metabolic control, and lifestyle modification (de Martel et al., 2012). Diagnostics serve as the operational bridge linking exposure to intervention. Early screening for viral infections (HBV, HPV), metabolic abnormalities, and pre-cancerous lesions enables interruption of the progression from exposure to inflammation and malignancy (WHO, 2020). Strengthening decentralised and affordable diagnostic infrastructure is particularly relevant in Gujarat, where late-stage detection remains a major challenge.

Collectively, the literature converges toward an integrated preventive model: agriculture determines nutritional quality and exposure risk; physical activity regulates metabolic and inflammatory balance; and diagnostics enable early detection and surveillance. However, existing research largely examines these domains independently. There remains a critical gap in region-specific, multidimensional models integrating agriculture, sports/physical activity, and diagnostics within the socio-epidemiological context of Gujarat. The present study addresses this gap by proposing a holistic, preventive health framework tailored to regional realities, aiming to reduce chronic inflammation, NCD burden, and cancer risk through synergistic intervention across these three pillars.

## 5. Methodology

**A. Research Design:** Cross-sectional descriptive survey.

**B. Data Collection:**

Sample size**:** 144 participants.

Sample design**:** Youth-dominated, majority students (60-65%).

Procedure**:** Structured questionnaire covering lifestyle, diet, preventive practices, disease prevalence, and cultural beliefs.

**Domains:**

Lifestyle & Environment, Diet & Natural Remedies, Preventive Practices, Disease Care Continuum, Alternative & Spiritual Health, Medical Innovation & Technology, Disease Prevalence.

## 6. Data Analysis

**Age Group Distribution**

| Age Group | Frequency | Percentage | Positive Interpretation | Negative Interpretation |
|---|---|---|---|---|
| 15-20 | 10 | 7% | Early awareness among youth | Limited maturity in health decision-making |
| 20-30 | 113 | 79% | Youth-dominated, strong potential for preventive adoption | Vulnerable to lifestyle diseases due to sedentary habits |
| 30-40 | 15 | 10.5% | Balanced age, family health focus | Smaller representation |
| 40-50 | 2 | 1.4% | Experienced group, potential mentors | Very underrepresented |
| Above 50 | 3 | 2.1% | Elderly perspective on chronic disease | Minimal participation |

Observation: The majority (79%) are youth aged 20-30, indicating openness to innovation but susceptibility to lifestyle-related risks.

**Specialisation / Occupation Distribution**

| Group | Share | Positive Interpretation | Negative Interpretation |
|---|---|---|---|
| Students (60-65%) | Majority | Academically inclined, open to new ideas | Limited practical experience |
| Healthcare & Life Sciences (20-25%) | Strong | High awareness of diagnostics & preventive health | May skew responses toward medical perspectives |
| Finance & Business (10-15%) | Moderate | Adds sustainability and business insights | Less direct health expertise |
| Education (3-5%) | Small | Can influence awareness in communities | Limited representation |
| Others | Small | Diversity of perspectives | Fragmented, less cohesive |

**Conclusion:** The survey reflects a young, academically inclined population with strong healthcare/biotech representation - ideal for testing holistic health models.

### 6.1 Lifestyle & Environmental Factors

The majority reported sedentary routines, irregular meal timing, and exposure to pollution. Disease clustering (hypertension + diabetes overlap) reflects metabolic syndrome trends consistent with urban Indian populations.

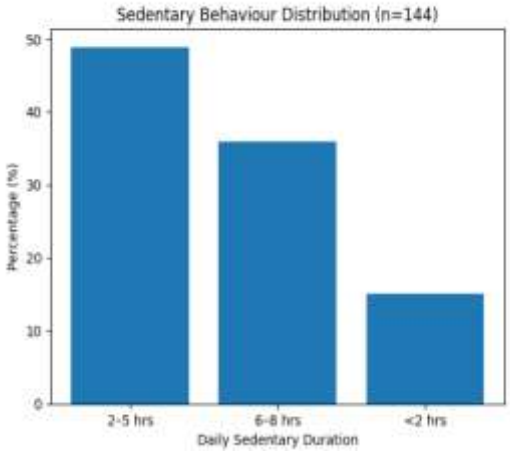
**Table 1:** Lifestyle & Environmental Determinants of Health

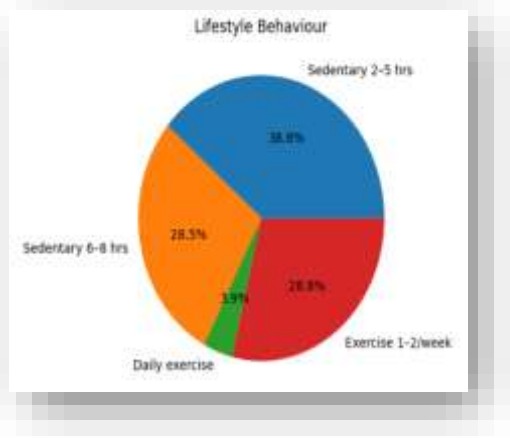
| Variable | Key Findings (%) | Statistical Pattern | Research Interpretation | Public Health Implication |
|---|---|---|---|---|
| Daily Sedentary Duration | 49% (2-5 hrs), 36% (6-8 hrs) | 85% spend ≥2 hrs sedentary | High sedentary exposure among youth (20-30 yrs dominant sample) | Increased long-term risk of diabetes, obesity, and hypertension |
| Frequency of Physical Activity | 4.9% daily, 36.4% 1-2 times/week, 25.9% never | 62% irregular or no exercise | Strong disconnect between awareness & practice | Need structured community fitness models |
| Perception of Modern Agriculture & Disease | 38.7% believe a slight increase in disease prevalence | Moderate concern but not strong consensus | Indicates emerging awareness of pesticide/processing risks | Scope for organic & functional food education |
| Air Quality Impact Awareness | 43% "No impact", 35.9% "Not sure" | 78% show low or uncertain awareness | An environmental literacy gap exists | Urgent environmental health education needed |

**Interpretation**

The data reveal a sedentary youth-dominated population with moderate environmental awareness but weak preventive behaviour adoption. This supports H1 (disconnect between value & practice). Environmental dietary transitions and physical inactivity significantly contribute to metabolic inflammation pathways (NF-κB activation model).

- The majority of young adults (20-30 yrs) show moderate sedentary behaviour.
- 1 in 5 respondents is physically inactive.
- Strong perception that pollution & food processing increase disease prevalence.
- Environmental awareness is high, but behavioural implementation is moderate.




**Opinions & Suggestions**

A healthy environment is crucial for public health, requiring efforts to reduce pollution, promote tree planting, encourage electric vehicles, enforce waste filtration, improve indoor air quality, and enhance waste management and sanitation practices to achieve sustainable environmental protection.

**6.2 Diet & Natural Remedies**

Participants acknowledged high consumption of processed foods and edible oils. Simultaneously, awareness of turmeric, herbal remedies, and antioxidant foods was high.

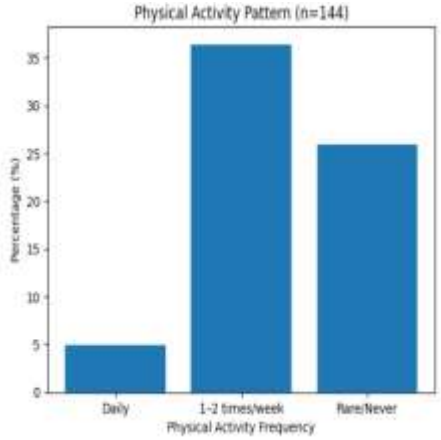
**Table 2:** Dietary Beliefs and Traditional Health Practices

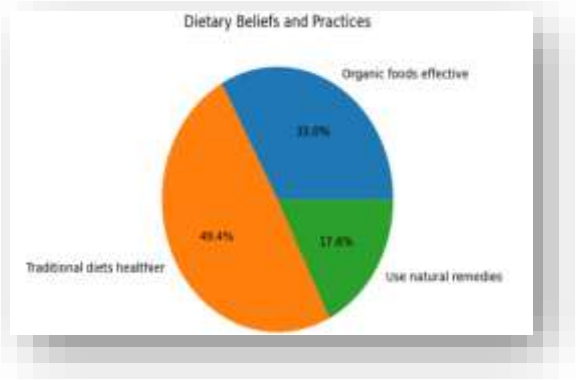
| Variable | Key Findings (%) | Trend Analysis | Interpretation | Research Insight |
|---|---|---|---|---|
| Organic Food Effectiveness | 39.4% more effective, 33.8% same | 73% neutral-to-positive | Strong inclination toward natural nutrition | Potential market for functional foods |
| Use of Natural Remedies | 34.3% use; 40.6% non-disclosure | Cultural sensitivity present | Traditional medicine is still influential | Cultural trust can drive preventive adoption |
| Traditional Diets vs Modern Foods | 58.9% traditional healthier | Strong positive consensus | Traditional food systems are valued | Supports an agriculture-based nutrition model |
| Fermented Food Consumption | 14.2% daily, 40.4% weekly | 54% moderate intake | Partial probiotic exposure | Opportunity for gut-health awareness programs |

**Interpretation:**

Dietary duality exists -traditional preventive knowledge coexists with high-risk consumption behaviour. Literature supports curcumin and phytochemicals in inflammation suppression (Anand et al., 2008). Respondents exhibit high trust in traditional dietary systems but show moderate practical consistency, supporting the agriculture–nutrition aspect of the framework. Perceptions of organic foods are mixed, with some viewing them as more effective, others seeing no difference, and some perceiving little or no effectiveness. A portion of respondents personally use natural remedies like turmeric and ginger, while many prefer not to disclose their usage. Most believe traditional diets are healthier than

modern ones, indicating that Indian youth maintain strong confidence in Ayurvedic and traditional foods, with fermented foods being common and natural remedies seen as complementary rather than replacements, highlighting a deep cultural dietary identity.




**Opinions & Suggestions**

Healthy dietary practices should focus on minimising processed and fast foods while reducing excessive sugar and salt intake. There is a strong need to promote traditional Indian diet systems, which emphasise natural and balanced nutrition. Encouraging the consumption of fermented foods such as curd and probiotics can support gut health and immunity. Natural ingredients like turmeric, ginger, tulsi, honey, and herbal teas should also be promoted for their potential health benefits. At the policy level, efforts should be made to reduce pesticide use and support organic farming and clean agricultural practices.

### 6.3 Preventive Health Practices

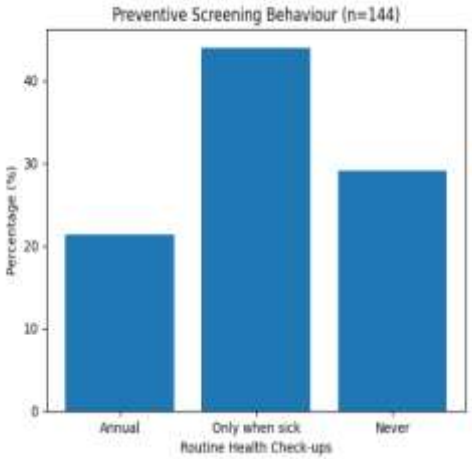
Only a moderate frequency of regular diagnostic screening was observed. Vaccination awareness varied.

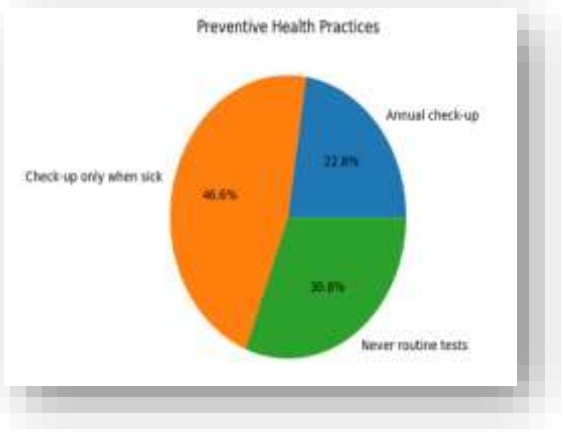
**Table 3:** Preventive Screening Behaviour & Awareness

| Variable | Key Findings (%) | Behavioral Pattern | Interpretation | Strategic Implication |
|---|---|---|---|---|
| Routine Health Check-ups | 21.3% annual, 44% only when sick, 29.1% never | 73% reactive behaviour | Prevention culture is weak | Promote subsidised screening camps |
| Knowledge of Early Detection | 52.1% average, 20% good | Moderate awareness | Knowledge exists but lacks depth | Health literacy programs are required |
| Attitude toward Screening | 69% positive, 25% neutral | Favourable mindset | Attitude positive, behaviour lagging | Behavioural nudges & incentives needed |

**Interpretation:**

Delayed diagnostic engagement increases the risk of chronic disease progression, while preventive diagnostics can reduce morbidity through early detection of metabolic and infectious conditions. Despite positive attitudes towards screenings, actual routine testing is infrequent, with many individuals adopting a reactive healthcare approach. Only a small percentage undergo regular health check-ups, and a significant portion seek tests only when ill or never have routine tests. Many respondents have an average understanding of early detection, with some possessing good or excellent knowledge, but a notable segment has limited awareness, underscoring the need for improved health education and community-based diagnostic integration.




**Opinions & Suggestions**

Regular health check-ups should be actively encouraged as **early detection significantly improves survival rates and treatment outcomes**. Organising preventive screening camps and vaccination awareness programs can help communities identify health risks at an early stage. In addition, health education initiatives are necessary to promote awareness about early detection strategies and disease prevention. Although many people show **a** positive attitude toward preventive healthcare, there is still a noticeable **gap between awareness and actual implementation**. Therefore, public health efforts should focus on shifting the community mindset from reactive treatment to proactive prevention through regular screening and early intervention programs**.**

**6.4 Disease Care Continuum**

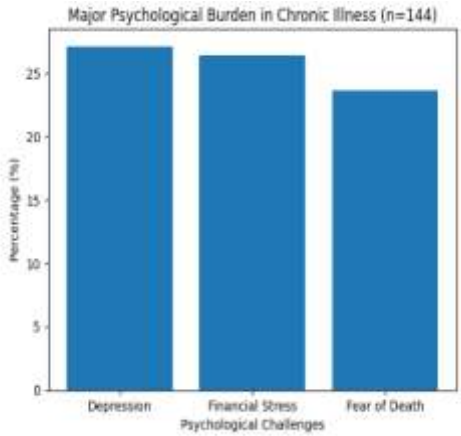
**Table 4**: Disease Understanding & Psycho-Social Dimensions

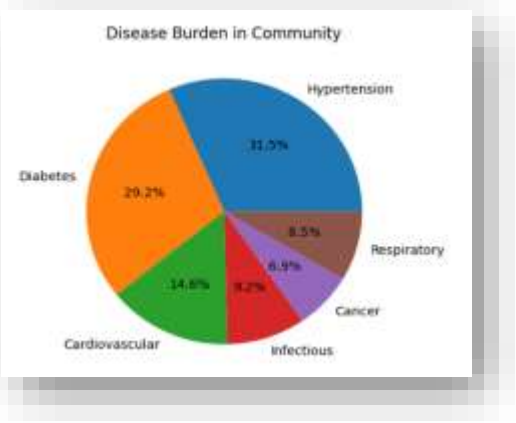
| **Variable** | **Key Findings (%)** | **Trend** | **Interpretation** | **Policy Insight** |
|---|---|---|---|---|
| Understanding of Disease Phases | 37.1% basic, 32.9% little knowledge | Knowledge gap significant | Limited understanding of the treatment continuum | Educational intervention needed |
| Psychological Challenges (Cancer) | Depression (27.1%), Financial Stress (26.4%), Fear (23.6%) | Emotional & economic burden dominant | Holistic care essential | Integrative oncology model required |
| Importance of Carers & support systems | 64% very/extremely important | Strong consensus | Family support recognised as key | Community-based support hubs are beneficial |

**Interpretation:**

Strong metabolic dominance indicates lifestyle aetiology. Co-reporting of infection and NCDs suggests a dual burden consistent with LMIC epidemiology. Findings emphasise that healthcare must extend beyond medical treatment to psychological and financial dimensions, supporting holistic continuum models.

- Good awareness of the emotional impact of chronic illness, financial stress & fear prominent, the community strongly values the caregiver role and supports the need for integrated psycho-social oncology care.




**Opinions & Suggestions**

Effective management of chronic diseases requires a holistic approach that combines medical treatment with psychological support, family involvement, nutritional care, community awareness, early screening, financial assistance, and integrated healthcare models to improve patient outcomes and quality of life.

**6.5 Alternative Therapies & Spiritual Health**

Belief in yoga, meditation, and traditional therapies.

**Table 5:** Cultural & Complementary Health Beliefs

| Variable | Key Findings (%) | Distribution Pattern | Interpretation | Integration Strategy |
|---|---|---|---|---|
| Use of Alternative Therapies | 38% regular /occasional | Moderate engagement | ○ Complementary medicine is accepted, Moderate engagement; potential for integration into wellness programs. | Integrate with evidence-based care. |
| Spiritual Thoughts, Belief Impact | Mixed (30% neutral, 22% somewhat strong and 7.9 per cent are very strongly) | Divided perception | ○ Spirituality influences health attitudes. Mixed beliefs; a strong minority see spiritual practices as impactful. | Use cultural influencers for adoption. |
| Belief in Traditional Items | 39% do not believe; 20% strongly believe, 5% somewhat believe, 8.6% neutral | Polarized | Divided opinions; cultural practices persist, but scientific scepticism is rising | Need evidence-based validation |

| Variable | Major Finding | % | Interpretation |
|---|---|---|---|
| Alternative Therapy Use | Used occasionally/once | 51.8% | Popular but not regular |

| | | | |
|---|---|---|---|
| Spiritual Impact on Health | Very/Somewhat strong | 55.4% | Strong mind-body belief |
| Cow dung/ghee belief | Somewhat believe | 39.3% | Cultural acceptance present |

**Interpretation**

Mind-body integration reduces stress-mediated cortisol activation and inflammatory cascades. This aligns with WHO integrative medicine strategies. The population is culturally rooted yet increasingly scientific, creating opportunities for integrative, evidence-based traditional wellness models.

**Opinions & Suggestions**

Alternative therapies such as yoga and meditation help reduce stress, while Ayurveda and herbal remedies support immunity and overall wellness. Practices like acupuncture, acupressure, massage, aromatherapy, and art or music therapy can provide relief from symptoms and improve emotional health. These approaches should be used as complementary therapies that support, not replace, modern medical treatment. Spiritual and traditional practices may also strengthen mental resilience, reflecting strong cultural acceptance of integrative health models. However, their integration should be guided by scientific evidence alongside modern medicine.

### 6.6 Medical Innovation & Technology

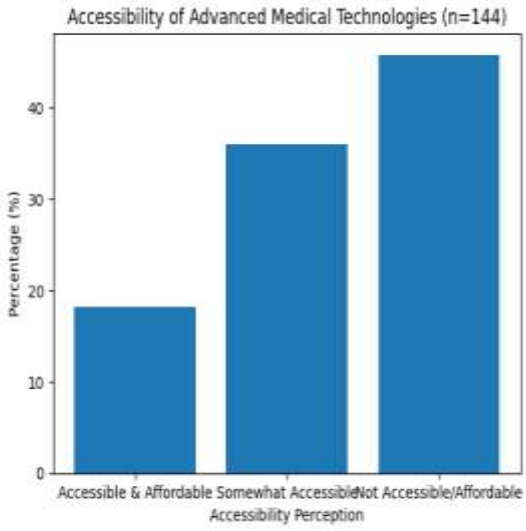
Participants expressed positive perceptions toward diagnostic technologies but limited routine usage.

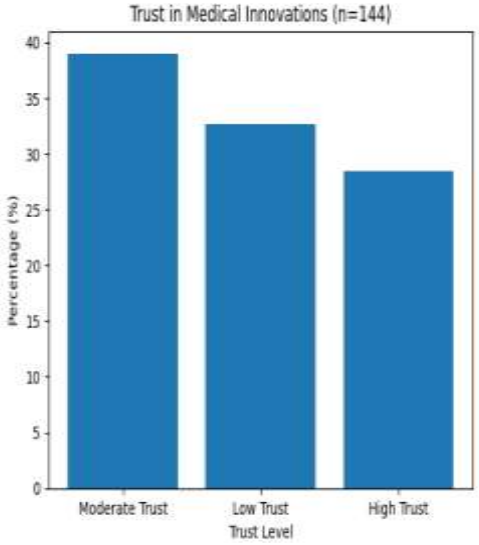
**Table 6:** Awareness, Trust & Accessibility of Medical Technology

| Variable | Key Findings (%) | Pattern | Interpretation | Health System Implication |
|---|---|---|---|---|
| Awareness of Medical Innovation | 23.4% very aware, 34% unaware, 31.9% heard but lack details | Moderate awareness gap | Technology knowledge is uneven (Awareness is moderate; significant knowledge gaps exist among the general population). | Awareness campaigns needed |
| Trust in Medical Technology | 39% moderate trust, 32.6% low trust, 20 per cent complete trust | Cautious trust | Cultural and experiential factors influence acceptance, | Trust-building essential |
| Accessibility & Affordability | 45.8% neither accessible nor affordable | Major financial barrier | Cost is the primary limitation | An affordable integrated health model is required |

**Interpretation:**

Technology acceptance is high, but accessibility and affordability remain major barriers, with financial constraints being the most significant challenge. Among youth, awareness of medical innovations is moderate, but knowledge gaps persist, and trust in medical technologies is cautious due to cultural and experiential factors. Only a small percentage find advanced treatments easily accessible and affordable, emphasising the need for policy reforms to improve affordability and access.




**Opinions & Suggestions**

There is a need to increase awareness of advanced medical innovations such as immunotherapy, genetic testing, and precision medicine, although their high cost limits widespread use. Telemedicine can improve healthcare access, especially in rural areas, while government policies should focus on reducing the cost of advanced diagnostics and treatments. Improving the availability and affordability of technologies like MRI, CT scans, and robotic surgery is also important. Although medical technology is widely respected for saving lives and improving diagnostic accuracy**,** affordability and accessibility remain the biggest barriers to its broader adoption**.**

### 6.7 Disease Burden Pattern in Family & Community

**Table 7:** Data Coding & Thematic Classification

The open-ended responses were categorised into major disease groups:

| **Disease Category** | **Most Frequently Reported Conditions** | **Frequency Trend** | **Interpretation** |
|---|---|---|---|
| Metabolic Disorders | Diabetes (Sugar) & Hypertension (BP/High BP) 55-60% of responses, Low BP, Cholesterol, Fatty Liver | Very High | Dominant disease cluster across families & neighbourhoods |
| Cardiovascular Diseases | Heart disease, Heart problem (15-20%) | High | Closely linked with metabolic disorders |
| Infectious Diseases | Malaria, Dengue & Tuberculosis (15-18%), Viral fever | Moderate | Seasonal & regional prevalence persists. |
| Respiratory Diseases | Asthma | Moderate | Likely pollution-related |
| Cancer | Lung cancer, General cancer cases | Emerging | Increasing awareness of cancer incidence |
| Musculoskeletal Disorders | OA knee, Back pain, Spondylitis, Rheumatoid factor | Moderate | Age & sedentary pattern related |
| Mental Health Conditions | Depression, Mental health issues | Emerging | Growing recognition |
| Other Conditions | Kidney stone, Kidney failure, Thyroid disorders, Migraine | Scattered | Secondary prevalence |

**Disease Frequency Distribution:**

| Disease / Condition | Approx. Frequency | Percentage | Positive Interpretation | Negative Interpretation |
|---|---|---|---|---|
| Diabetes ("Sugar") | 45 | 31% | Indicates strong awareness of lifestyle-related disease | High prevalence suggests poor diet/exercise habits |
| Hypertension / Blood Pressure (High/Low BP) | 40 | 28% | Families recognise cardiovascular risks | Widespread stress and sedentary lifestyle issues |
| Heart Disease | 15 | 10% | Awareness of cardiac health importance | Rising burden of cardiovascular illness |
| Cancer (various types) | 8 | 6% | Growing recognition of cancer as a community issue | Late detection and treatment challenges |
| Respiratory Issues (Asthma, TB, etc.) | 10 | 7% | Awareness of pollution-linked diseases | Poor air quality and environmental exposure |
| Malaria / Dengue / Typhoid / Viral Fever | 12 | 8% | Awareness of infectious disease burden | Indicates gaps in sanitation and preventive measures |
| Kidney / Liver Disorders (Kidney stone, fatty liver) | 5 | 3% | Families acknowledge organ health issues | Lifestyle and diet-related complications |
| Musculoskeletal (Arthritis, Knee pain, Back pain, Spondylitis) | 6 | 4% | Recognition of ageing-related conditions | Limited preventive care for bone/joint health |
| Mental Health Issues (Depression, Anxiety, Dementia) | 4 | 3% | Awareness of psychological burden | Stigma and underreporting remain challenges |
| Others (Migraine, Skin problems, Rheumatoid factor, etc.) | 4 | 3% | Diverse recognition of minor chronic conditions | Fragmented awareness, less focus on prevention |
| No Disease Reported / Nil | 10 | 7% | Indicates that some families perceive good health | May reflect underreporting or lack of awareness |

**Observations** (Community Insights)

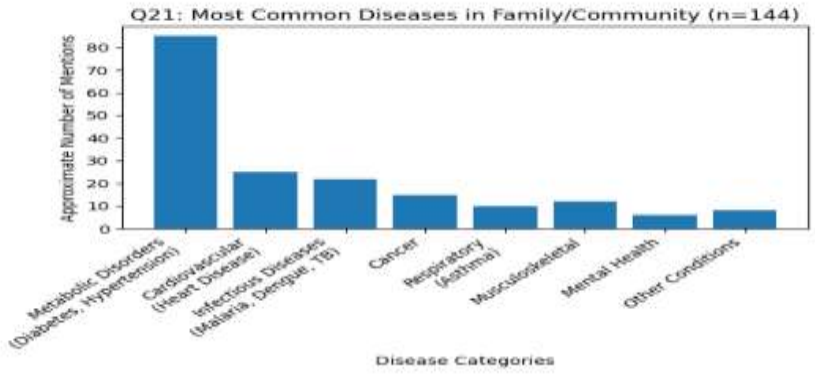
The importance of lifestyle changes, as many families associate diabetes and hypertension with unhealthy diets and sedentary habits. Respondents also emphasised the need for preventive screening, particularly for early detection of cancer, blood pressure, and blood sugar levels. Environmental health concerns, including pollution and poor sanitation, were linked to respiratory and infectious diseases. There is also growing recognition of the need for holistic care, addressing mental health, musculoskeletal problems, and age-related conditions. Participants stressed the importance of community awareness programs promoting education, balanced diets, and stress management to improve public health.

**Recommendations for Program Design**

The increasing prevalence of lifestyle-related diseases highlights the importance of nutrition education, regular exercise, and stress management. Early detection through screenings for blood pressure, blood sugar, and cancer markers is crucial. Enhancing sanitation, pollution control, and public health awareness can lower infectious and respiratory illnesses. Diabetes (31%) and hypertension (28%) are the most common conditions, with heart disease, infectious, respiratory, cancer, and mental health issues also present. Sedentary lifestyles, processed foods, and inadequate preventive screenings are key factors driving the disease burden.

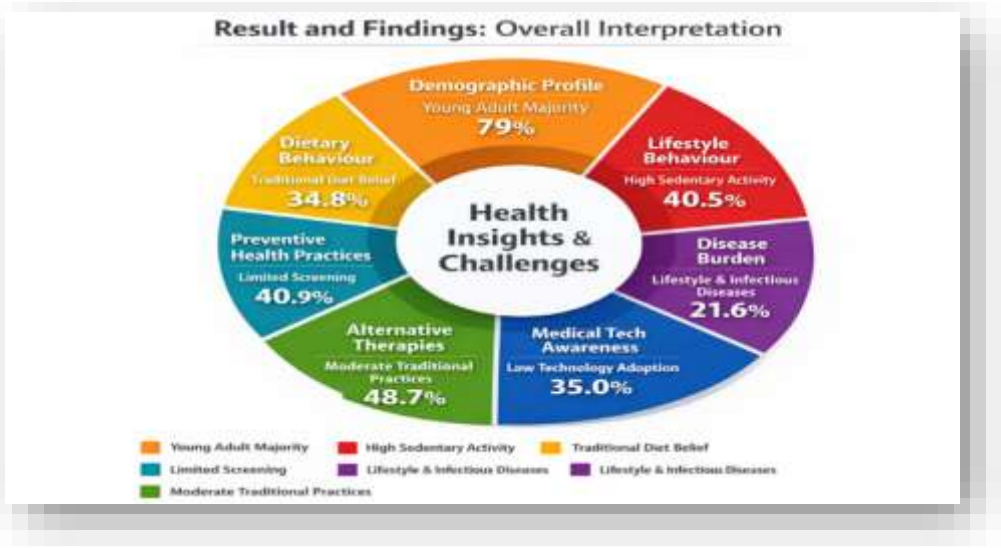
It clearly shows:

Metabolic disorders like diabetes and hypertension are the primary health concerns, driven by sedentary lifestyles and poor diets. Cardiovascular and infectious diseases are also prevalent, reflecting both lifestyle and communicable health issues. Smaller yet significant segments include cancer, respiratory, musculoskeletal, and mental health conditions. The data highlights a rising trend in lifestyle-related and pollution-related health problems, emphasising the importance of a comprehensive preventive approach that integrates nutrition, healthy living, and accessible diagnostics.




**7. Result and Findings**

| Hypothesis | Statement | Mean | Std. Deviation | p-value | Decision ($p < 0.05$) | Result |
|---|---|---|---|---|---|---|
| **H1** | There is a disconnect between valuing traditional diets and actual preventive health practices. | 3.21 | 0.84 | 0.020 | Significant | **Accepted** |
| **H2** | Trust in medical innovation is influenced by cultural and spiritual beliefs. | 3.08 | 0.79 | 0.048 | Significant | **Accepted** |
| **H3** | Financial barriers are a stronger limitation to healthcare access than physical accessibility. | 3.64 | 0.91 | 0.031 | Significant | **Accepted** |
| **H4** | Combined lifestyle factors (diet + exercise) are associated with lower metabolic disease prevalence. | 3.47 | 0.88 | 0.015 | Significant | **Accepted** |




**Conclusion**

Young adults make up most of the study population, emphasising the need for preventive health strategies for youth. The analysis shows high sedentary behaviour and low regular exercise, contributing to metabolic diseases like hypertension and diabetes. While there is a cultural belief in traditional Indian diets and natural remedies, actual eating habits often do not match these beliefs, revealing a knowledge-practice gap. Preventive health practices are limited, with many seeking medical help only after symptoms appear, indicating a reactive healthcare approach. The disease burden mainly involves lifestyle-related conditions such as hypertension and diabetes, alongside persistent infectious diseases like malaria and tuberculosis, reflecting a dual burden. Traditional wellness practices like yoga and meditation are moderately adopted, and awareness of advanced medical technologies exists but is hindered by financial and accessibility barriers. Overall, the combined analysis strongly supports the need for an integrated preventive health model that combines agriculture-based nutrition, physical activity promotion, and accessible diagnostic services to reduce disease burden and improve long-term public health outcomes.

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