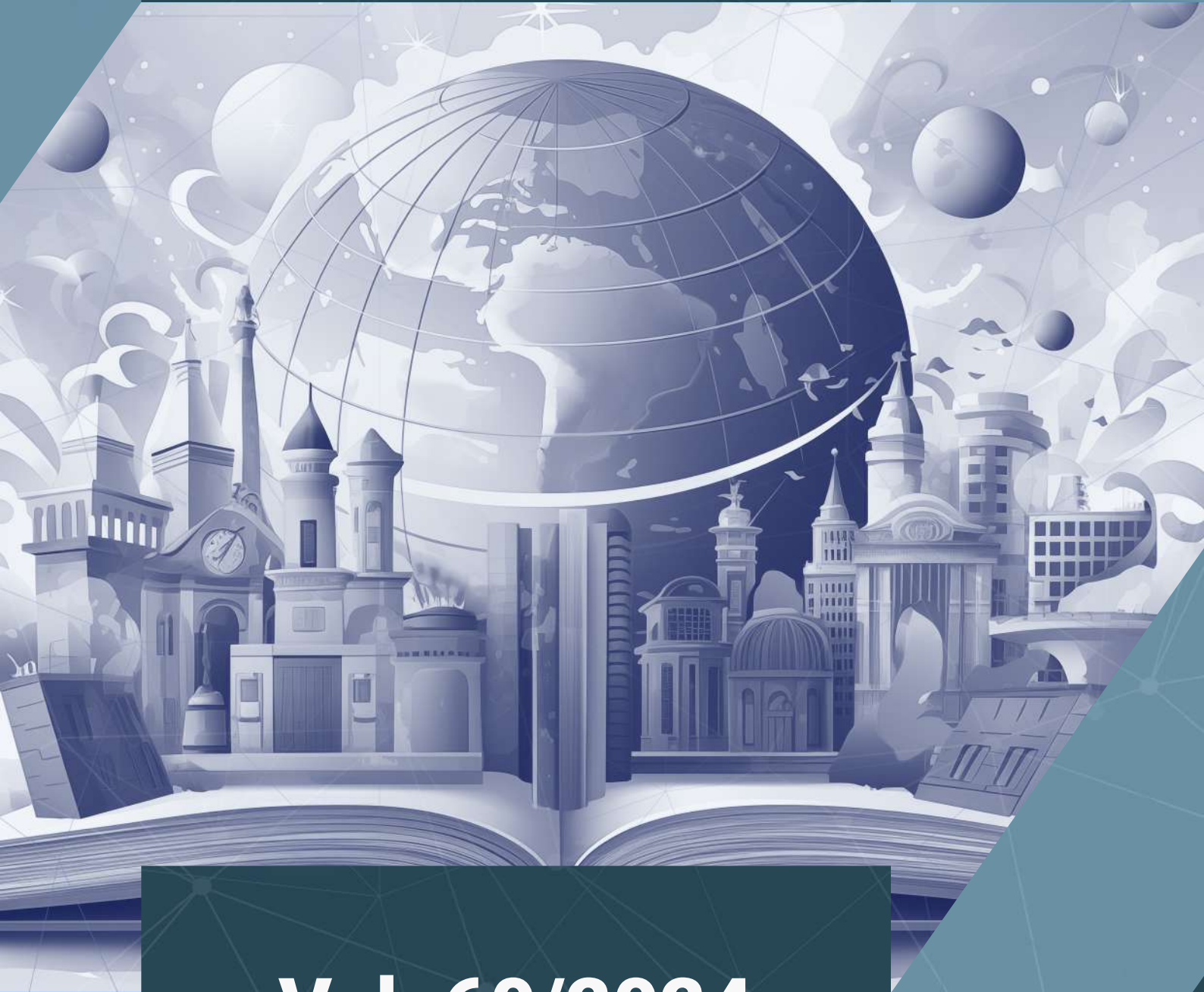




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# **Socio-Economic Demographics and Health Status of the Residents of a Hinterland Community in Negros Island, Philippines**

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**Abstract.** This study examined the socioeconomic demographics and health status of residents in a hinterland community in Guihulngan City, Negros Island, Philippines. The research utilized the RAND 36-Item Health Survey to collect data from 163 household heads, measuring eight health concepts: physical functioning, bodily pain, role limitations (physical and emotional), emotional well-being, social functioning, energy/fatigue, and overall health perceptions. The findings revealed that the community faces socioeconomic challenges, including low educational attainment, limited employment opportunities, and reliance on government assistance. Despite these challenges, residents reported good overall health status, highlighting the potential influence of factors beyond socioeconomic demographics, such as lifestyle choices, social support, and access to healthcare. The study also identified variations in health status based on age, employment status, family monthly income, and weight, emphasizing the complex interplay of various social determinants. The research concludes by emphasizing the need for targeted interventions that address the specific needs of vulnerable groups and promote health equity in hinterland communities.

**Keywords.** Socio-economic demographics, health status, hinterland residents, health survey, Guihulngan City, Philippines

## **1.0 Introduction**

Hinterland communities worldwide face distinct challenges that hinder their progress towards Sustainable Development Goals (SDGs). The Social Determinants of Health (SDH) framework highlights how lower literacy rates, poverty, and limited access to basic necessities directly impact their well-being [1]. These disparities are often linked to the remoteness and spatial dispersion of hinterland areas [2] and highlight the specific challenges these marginalized populations face [3]. Also, hinterland livelihoods often rely on natural resources, making them increasingly vulnerable to climate change and environmental degradation [4]. Targeted interventions are crucial to address these interconnected SDH challenges. Prioritizing sustainable resource management, infrastructure, and education empowers these communities, ensuring they can achieve the SDGs and build a more equitable and sustainable future [5].

ASEAN countries face a complex intersection of health challenges, particularly among rural and marginalized populations. High maternal and child mortality, persistent communicable diseases, and rising non-communicable diseases are exacerbated by poverty, limited education, and inadequate healthcare access [6,7,8,9,10]. The COVID-19 pandemic further exposed these disparities [11], while financial constraints and workforce shortages hinder progress towards Universal Health Coverage. Climate change adds another layer of threat, particularly for agricultural communities [9]. A multi-faceted approach involving strengthened health systems, improved education, sustainable development, regional cooperation, and targeted interventions is crucial for improving health outcomes across ASEAN [12,13].

The Philippines' geographically dispersed hinterland communities, often in mountainous or island regions, face significant socioeconomic and health challenges. Residents in these areas typically experience lower educational attainment and higher poverty than those in urban centers [14]. Limited access to quality healthcare facilities and essential services can exacerbate existing health issues and hinder preventative care. Furthermore, dependence on agriculture or natural resource extraction exposes these communities to environmental risks and vulnerabilities associated with climate change [15]. Bridging these disparities necessitates investments in infrastructure development, improved healthcare access, and livelihood diversification programs to promote these Filipino hinterland communities' well-being and sustainable development.

Though data specific to Guihulngan City is limited, hinterland communities in the Philippines like Guihulngan often face socioeconomic challenges such as lower educational attainment and higher poverty rates compared to urban areas [14]. Residents may have limited access to quality healthcare facilities and essential services, potentially impacting health outcomes. Further research is needed to understand the specific demographics and health status of residents in Guihulngan City to develop targeted interventions that improve their well-being and bridge potential disparities.

While research exists on the general challenges faced by hinterland communities globally [2,4], a significant gap remains regarding the specific socioeconomic demographics and health status of residents in these geographically dispersed areas, particularly within the Philippines [14]. Limited research delves into the specific health disparities experienced by individual hinterland communities [16]. Much of the existing work focuses on broad trends, potentially masking the unique challenges faced by these populations [17]. With the current existing research, a gap exists regarding the specific health disparities and socioeconomic conditions within individual communities, particularly in Negros Island, Philippines.

This study addressed the knowledge gap by profiling the socioeconomic demographics and health status of residents in a hinterland community in Negros Island, Philippines. It also examined various demographic factors (age, sex, civil status, religious affiliation, number of dependents), socioeconomic factors (family monthly income, educational attainment, household members), and health-related factors (blood pressure, body mass index, access to basic necessities and healthcare). In addition, it assessed respondents' health status across multiple dimensions (physical functioning, bodily pain, role limitations, emotional well-being, social functioning, energy levels, general health perceptions, and health change) and compared the differences in health status based on the aforementioned groupings. The findings served as baseline data for the proposed Health Plan.

## **2.0 Literature Review**

The United Nations Sustainable Development Goals (SDGs) have the potential to significantly impact the overall health status of hinterland communities, particularly those focused on ending poverty, eliminating hunger, ensuring good health and well-being, providing clean water and sanitation, and promoting sustainable development [18,19]. Research demonstrates that progress on these goals translates to improved health outcomes in hinterlands through reduced child mortality, improved maternal health, greater access to essential healthcare services, and lowered risks of infectious diseases. However, hinterland communities often face disproportionate challenges in achieving these SDGs due to limited resources, infrastructure gaps, and geographic isolation [20]. Therefore, targeted efforts and investment in these areas are crucial to fully realize the health benefits of the SDGs for these populations.

Physical functioning and bodily pain are crucial health dimensions, and research highlights their significance in hinterland communities. Residents may face unique challenges due to limited healthcare access, physically demanding occupations, and geographic isolation, leading to lower physical functioning and increased chronic pain [21,22]. Lower physical functioning is associated with increased chronic disease risk and poorer mental health outcomes in these populations [23]. Chronic pain significantly diminishes quality of life, impeding physical functioning and contributing to mental health burdens. Interventions focusing on promoting physical activity, addressing healthcare barriers, and implementing culturally tailored pain management programs are crucial for improving these dimensions in these communities [24].

Role limitations due to physical and emotional problems are also significant health dimensions. Hinterland communities are particularly vulnerable to physical limitations due to demanding work, inadequate healthcare infrastructure, and long wait times for specialists [25,26]. These limitations can have cascading effects – impacting family monthly income, leading to social isolation, and further straining already limited healthcare resources in hinterland areas [22]. Addressing these limitations requires innovative strategies like telehealth services, community-based mental health support, and tailored interventions to combat stigma within hinterland settings [27].

Emotional well-being is a vital dimension often strained in hinterland communities. Studies reveal heightened rates of depression and anxiety linked to social isolation, economic hardship, and limited mental health resources [28,29]. Poor emotional well-being can have ripple effects, contributing to chronic health conditions and hindering an individual's ability to cope with life stressors [23]. Interventions prioritizing mental health awareness, community-based support, and increased access to mental healthcare, particularly through telehealth solutions, are crucial [30].

Social functioning is another key dimension affected by the unique challenges faced by hinterland communities. While tight-knit social networks can provide essential support, limited social opportunities and geographic isolation can create challenges [27]. Physical health problems associated with demanding work and reduced access to healthcare may further strain social participation [22]. Additionally, mental health issues can significantly hinder social functioning, and hinterland communities often face limited mental health resources [31].

Energy/fatigue is a crucial dimension of health influenced by unique factors in hinterland communities. Physically demanding labor in industries like agriculture or mining can lead to chronic fatigue [24]. Additionally, limited access to healthcare may leave physical and mental health conditions, known contributors to fatigue, unaddressed [21]. Further, long travel times to reach health services can compound exhaustion. Interventions focused on

improving working conditions, increasing access to preventive healthcare, and utilizing telehealth strategies to manage chronic conditions may improve energy levels and combat fatigue in hinterland communities [22].

General health perceptions, encompassing an individual's overall sense of well-being, can vary significantly in hinterland communities. Residents may downplay health concerns due to cultural stoicism or a focus on work demands [22]. Limited healthcare access and long wait times can lead to delayed diagnoses and a sense of declining health [26]. Additionally, the physically demanding nature of work in hinterland areas might contribute to a perception of poorer health over time [25].

Health change perceptions, captured by the RAND 36-Item Health Survey, reflect an individual's sense of how their health has evolved over a given period. Hinterland populations may report unique patterns in perceived health change due to the physically demanding nature of work, limited access to preventive care and specialists, and potential delays in diagnosis or management of health conditions [25,21]. Interventions that target improved primary care access, chronic disease management, and telehealth solutions to address health problems early on could positively impact how individuals within hinterland communities perceive changes in their health over time [27].

### **3.0 Framework of the Study**

This paper theorized that people's health varies depending on socioeconomic demographics like age, sex, civil status, education level, family monthly income, sources of livelihood, access to basic necessities and healthcare facilities, and the availability of qualified medical professionals. This is anchored on the Social Determinants of Health (SDH) Framework espoused by the World Health Organization [32].

The social determinants of health (SDH) encompass the non-medical factors significantly influencing health outcomes throughout a person's life. This includes the environments where people are born, grow, work, and age and the broader systems, like economic policies and social norms, that shape those environments. SDHs are primary contributors to health inequities, which are the unfair and preventable differences in health observed within and between countries. People in lower socioeconomic positions consistently experience worse health outcomes, highlighting a social gradient in health. Examples of influential social determinants include family monthly income, education, sources of livelihood, basic necessities, social support, and access to affordable, quality healthcare services and facilities. Importantly, research indicates that SDH can impact health more than healthcare access or individual lifestyle choices. Estimates suggest that SDH accounts for 30-55% of health outcomes. Addressing SDH effectively requires action from all sectors of society to reduce health inequities and improve overall population health.

In the context of this study, the Social Determinants of Health (SDH) framework provides a clear explanation for why health outcomes vary across demographic groups. The interplay of factors such as age, sex, civil status, education level, family monthly income, sources of livelihood, access to basic necessities and healthcare facilities, and the availability of qualified medical professionals across a person's life shapes their health opportunities. For example, lower Family monthly income may limit access to healthy food and quality housing, while lower education can hinder a person's understanding of health information. All of this increases the risk of chronic diseases and poorer health outcomes. Additionally, within demographic groups, variations in health outcomes can often be explained by differences in the

social determinants that individuals experience. By understanding SDH, we can design interventions and policies that address the root causes of health disparities.

#### **4.0 Methods**

This study employed a quantitative, descriptive-comparative design to investigate the relationship between socioeconomic factors and health disparities in a specific community. The RAND 36-Item Health Survey was used to collect data from 163 household heads in a hinterland community in Guihulngan City, Negros Island, Philippines. The survey measures eight health concepts: physical functioning, bodily pain, role limitations (physical and emotional), emotional well-being, social functioning, energy/fatigue, and overall health perceptions. Stratified random sampling ensured representation across the community's diverse subgroups. Before the actual data gathering, the research instrument was subjected to reliability testing using a pilot test to 30 respondents who were not part of the actual study. The results yielded a reliability index of 0.935, indicating the research instrument's reliability. Ethical considerations were prioritized, with clearances obtained from relevant agencies, informed consent secured, and enumerators thoroughly trained. Data collection involved face-to-face interviews in a private setting to protect confidentiality.

Descriptive and comparative analysis strategies were used to analyze the data. Descriptive analysis summarized the socioeconomic profile and health status of respondents, while comparative analysis, using Mann-Whitney U and Kruskal-Wallis tests, examined differences in health status across socioeconomic groups. This approach allowed for a comprehensive understanding of the complex interplay between socioeconomic factors and health disparities in the studied community. In addition, this study prioritized ethical standards, informed consent, and the protection of vulnerable participants. Participants were informed of the study's aims and their right to withdraw, and their privacy was strictly maintained. Potential risks were minimal, and while direct benefits might not be immediate, findings could inform interventions to improve the community's health and socioeconomic conditions. The researcher, qualified in quantitative research and public health, ensured transparency and fairness in participant selection and data collection.

#### **5.0 Results and Discussion**

##### ***Socioeconomic Profile of the Respondents***

The demographic profile reveals a population primarily comprised of older women (49.1%, n=80) with low educational attainment (58.9%, n=96 having only reached elementary level) and limited employment (63.2%, n=103 not employed), often relying on family or social support. Access to clean water is prevalent (98.8%, n=161), but open defecation (23.9%, n=39) poses health risks. These factors can significantly influence health outcomes and susceptibility to diseases. The healthcare facility profile indicates limited access to healthcare professionals, with a heavy reliance on Barangay Health workers (68.8% often or always available). Access to doctors is limited, with a significant proportion of respondents reporting never having access (69.3%, n=113). Nurses are also rarely available (74.2%, n=121). This lack of access to specialized medical services could negatively impact health status, particularly for chronic conditions. The household profile highlights socioeconomic vulnerabilities, with 94.5% earning less than PHP 7500 monthly, primarily engaged in farming (86.5%). A significant portion (36.8%) are 4P's beneficiaries, suggesting reliance on government assistance. Health-wise, the majority of respondents exhibit prehypertension (58.3%) or stage 1 hypertension (21.5%), while

a considerable number (22.7%) are overweight. These findings underscore the need for targeted health interventions and policy decisions.

### ***General Health Status of Respondents***

The respondents report a good overall health status ( $M=56.42$ ,  $SD=13.88$ ), aligning with recent research emphasizing the multidimensional nature of health, encompassing physical, mental, and social well-being [33]. The high energy levels, minimal bodily pain, and a general sense of well-being reported by the respondents reflect the interconnectedness of self-rated health, psychological well-being, and life satisfaction [34]. This positive outlook is reinforced by the strong social support network mentioned by respondents, as social and emotional support have been shown to have protective effects on both mental and physical health [35].

In terms of physical functioning, respondents reported no limitations in performing their daily activities ( $M=67.12$ ,  $SD=30.48$ ). This suggests regular physical activity, a healthy weight, and good cardiovascular and musculoskeletal fitness [36,37]. However, the presence of mild bodily pain ( $M=58.79$ ,  $SD=20.97$ ) interfering with work and housework raises concerns about potential underlying musculoskeletal issues or stress-related factors [38,39,40,41].

Regarding emotional problems, respondents reported that these issues did not affect their work or daily activities ( $M=44.99$ ,  $SD=42.96$ ). This aligns with research highlighting the importance of complete mental health for better overall functioning [42,43]. Respondents also reported generally feeling good about their lives ( $M=56.10$ ,  $SD=13.07$ ). This positive emotional well-being has significant health implications, as it is associated with reduced risk of mental health disorders, improved immune function, and better cardiovascular health [44,45,46].

However, respondents reported that their physical health or emotional problems moderately interfered ( $M=48.63$ ,  $SD=8.65$ ) with their normal social activities. This aligns with research findings that physical and psychological difficulties can increase the risk of activity limitations [47,48]. Despite this moderate interference, respondents generally reported feeling good over a period of time ( $M=53.59$ ,  $SD=14.72$ ), having a lot of energy, enthusiasm, and vitality [49,50,51,52].

Finally, regarding their perception of general health, respondents generally reported their health as good ( $M=49.54$ ,  $SD=28.26$ ). While they did not get sick easily compared to others and did not anticipate their health deteriorating, the high standard deviation indicates variability in perceptions [53,54]. This variability necessitates further investigation to identify potential disparities and address unmet health needs within the population. Additionally, respondents reported no significant change in their health over the past year ( $M=49.54$ ,  $SD=28.26$ ), suggesting a consistent lifestyle and effective management of any existing health conditions [55,56]. However, the high standard deviation indicates variability among respondents, with some potentially experiencing improvements or declines in their health, warranting further investigation.

**Table 1.** *General Health Status of the Respondents*

<b>Health Status</b>	<b>M</b>	<b>SD</b>	<b>Interpretation</b>
Physical Functioning	67.12	30.48	Not Limited
Bodily Pain	58.79	20.97	Mild
Role Limitations due to Physical Health	44.79	40.11	No
Role Limitations due to Emotional Problem	44.99	42.96	No
Emotional Well-Being	56.10	13.07	Good
Social Functioning	48.63	8.65	Moderate
Energy/Fatigue	53.59	14.72	Good
General Health Perception	57.33	13.29	Good
Health Change	49.54	28.26	About the Same
<b>Overall</b>	<b>56.42</b>	<b>13.88</b>	<b>Good</b>

**General health status and socioeconomic demographics of respondents**

The respondents exhibited good overall health (M=56.42, SD=13.88) regardless of age, sex, civil status, educational attainment, religious affiliation, employment status, number of dependents, living in household size, family monthly income level, blood pressure, or BMI. This suggests that factors other than traditional demographics, such as lifestyle choices, access to healthcare, and environmental factors, may play a more significant role in determining health outcomes [57,58].

However, health status did vary by educational attainment, with respondents lacking formal education reporting moderate health status (M=46.67, SD=14.89). This raises concerns about potential health disparities due to limited health literacy, reduced access to healthcare resources, and potentially less awareness of preventive measures. Research consistently demonstrates a strong correlation between lower educational attainment and poorer health outcomes and behaviors [59,60].

Health status also differed by family monthly income, with respondents earning Php 7,500 or higher reporting excellent health status (M=86.67, SD=12.11). This difference highlights the potential health implications of income disparities and underscores the need for policies and interventions that address socioeconomic factors to improve overall population health [61,62,63,64].

**Table 2A.** *General Health Status across Sociodemographic of Respondents*

<b>Variable</b>	<b>M</b>	<b>SD</b>	<b>Interpretation</b>
Age			
Younger	59.44	13.50	Good
Older	53.29	13.65	Good
Sex			
Male	57.99	13.58	Good
Female	55.78	14.00	Good
Civil Status			
Single	57.44	15.26	Good
Married/Widowed	56.30	13.76	Good
Educational Attainment			
No Formal Education	28.65	2.05	Fair
Elementary	56.91	13.79	Good
High School	55.99	12.70	Good
College	59.64	17.42	Good
Religious Affiliation			
Catholic	56.12	13.98	Good
Non-Catholic	57.59	13.60	Good
Employment			
Yes	55.21	14.55	Good
No	57.13	13.49	Good

**Table 2B.** *General Health Status across Sociodemographic of Respondents*

<b>Variable</b>	<b>M</b>	<b>SD</b>	<b>Interpretation</b>
Number of Number of dependents			
3 or less	55.71	13.86	Good
More than 3	57.68	13.94	Good
Members Living in the Living in the household			
Senior	53.32	15.12	Good
PWD	46.67	18.36	Good
Both	50.30	8.06	Good
No	58.42	12.75	Good
Family monthly income			
Less than Php 7500	56.07	13.73	Good
Php 7500 and above	62.42	15.83	Very Good
Blood Pressure			
Normal	51.59	7.96	Good
Prehypertension	58.92	13.77	Good
Stage 1 Hypertension	52.00	13.69	Good
Stage 2 Hypertension	56.69	17.40	Good
BMI			
Underweight	56.48	10.68	Good
Healthy	56.86	14.54	Good
Overweight	54.56	13.01	Good
Obese	58.87	17.72	Good
<b>Whole</b>	<b>56.42</b>	<b>13.88</b>	<b>Good</b>

### ***Difference in the Health Status in terms of Physical Functioning***

The analysis revealed that age and blood pressure significantly influence physical functioning, with older individuals and those with prehypertension or stage 2 hypertension reporting poorer outcomes ( $U=1988.000$ ,  $p=0.000$ ;  $\chi^2(3)=17.315$ ,  $p=0.001$ ). Additionally, living with seniors was associated with lower physical functioning ( $\chi^2(3)=8.047$ ,  $p=0.045$ ). These findings align with research indicating a decline in physical function with age and the negative impact of hypertension on physical health [65,66]. The study also supports the idea that comorbidities and health behaviors play a significant role in physical functioning [67,66].

**Table 3.** *Difference in the Health Status in terms of Physical Functioning*

<b>Variable</b>	<b>U</b>	<b>z</b>	<b>p</b>
Age	1988.000*	-4.508	0.000
Sex	2602.500	-0.461	0.645
Civil Status	1232.500	-0.047	0.962
Religious Affiliation	1836.500	-1.299	0.194
Employment	3053.000	-0.130	0.897
Number of dependents	2981.500	-0.305	0.761
Family Monthly Family monthly income	584.500	-0.804	0.422
<b>Variable</b>	<b><math>\chi^2</math></b>	<b>df</b>	<b>p</b>
Educational Attainment	5.985	3	0.112
Living in the Living in the household	8.047*	3	0.045
Blood Pressure	17.315*	3	0.001
BMI	2.946	3	0.400

Note: \*difference is significant when  $p \leq 0.05$

### ***Difference in the Health Status in terms of Bodily Pain***

The analysis of bodily pain across various demographic and health-related factors revealed no significant differences ( $p > 0.05$  for all comparisons). This suggests that the

experience of bodily pain is not significantly influenced by age, sex, civil status, religious affiliation, employment, number of dependents, family monthly income, educational attainment, living in the household, blood pressure, or BMI. This finding aligns with existing literature, which demonstrates inconsistent patterns in the relationship between pain and demographic factors [68,69,70]. The mixed findings highlight the need for further research to understand the multifaceted nature of pain and its underlying causes.

**Table 4.** *Difference in the Health Status in terms of Bodily Pain*

<b>Variable</b>	<b>U</b>	<b>z</b>	<b>p</b>
Age	3053.500	-0.904	0.366
Sex	2460.000	-0.995	0.320
Civil Status	960.500	-1.556	0.120
Religious Affiliation	2092.000	-0.224	0.823
Employment	2668.500	-1.481	0.139
Number of Number of dependents	2886.000	-0.642	0.521
Family monthly income	649.000	-0.327	0.744
<b>Variable</b>	<b><math>\chi^2</math></b>	<b>df</b>	<b>p</b>
Educational Attainment	2.666	3	0.446
Living in the household	4.225	3	0.238
Blood Pressure	1.039	3	0.792
BMI	1.315	3	0.725

*Note:* difference is significant when  $p \leq 0.05$

#### ***Difference in the Health Status in terms of Role Limitations Due to Physical Health***

The analysis of role limitations due to physical health revealed no significant difference across age, sex, civil status, religious affiliation, employment, number of dependents, family monthly income, educational attainment, living in the household, blood pressure, or BMI ( $p > 0.05$  for all comparisons). This suggests that the experience of such limitations is multifaceted and influenced by factors beyond those investigated in this study. Future research should explore potential contributors like specific health conditions, lifestyle factors, and psychosocial factors to gain a more comprehensive understanding.

This finding is consistent with the existing literature on health status and functional limitations, which often reports mixed results across demographic factors. For instance, Mangada and Ogabang [71] found no significant differences in health literacy and functional status based on age, gender, and other sociodemographic characteristics among elderly Filipinos, while Adair et al. [72] reported that high waist circumference increased the odds of mobility limitations in Filipino women. These contrasting findings highlight the complexity of the relationship between health status, functional limitations, and various individual and contextual factors.

**Table 5.** *Difference in the Health Status in terms of Role Limitations Due to Physical Health*

<b>Variable</b>	<b>U</b>	<b>z</b>	<b>p</b>
Age	3239.000	-0.278	0.781
Sex	2597.000	-0.488	0.625
Civil Status	1228.000	-0.073	0.942
Religious Affiliation	1985.000	-0.683	0.495
Employment	2774.000	-1.123	0.261
Number of dependents	3010.000	-0.207	0.836
Family monthly income	670.000	-0.173	0.863
<b>Variable</b>	<b><math>\chi^2</math></b>	<b>df</b>	<b>p</b>
Educational Attainment	3.683	3	0.298
Living in the Living in the household	2.624	3	0.453
Blood Pressure	5.059	3	0.168
BMI	3.231	3	0.357

*Note:* difference is significant when  $p \leq 0.05$  317

### ***Difference in the Health Status in terms of Role Limitations Due to Emotional Problem***

The analysis of role limitations due to emotional problems revealed no significant difference across most demographic and health-related factors, except for BMI ( $\chi^2(3)=7.935$ ,  $p=0.047$ ). Overweight respondents reported significantly greater role limitations compared to underweight respondents, suggesting a potential relationship between weight status and emotional well-being. This finding aligns with existing literature, which demonstrates a complex relationship between weight status and emotional well-being. While some studies find no significant differences in mental health across weight categories [73], others report a U-shaped relationship, with both underweight and obese individuals experiencing more emotional problems [74]. This highlights the need for further research to clarify the complex interplay between weight status, emotional well-being, and potential contributing factors.

**Table 6.** *Difference in the Health Status in terms of Role Limitations Due to Emotional Problem*

Variable	U	z	p
Age	3116.500	-0.712	0.476
Sex	2620.500	-0.407	0.684
Civil Status	1219.000	-0.126	0.900
Religious Affiliation	1904.500	-1.047	0.295
Employment	2691.500	-1.446	0.148
Number of dependents	2930.500	-0.501	0.617
Family monthly income	519.500	-1.33	0.184
Variable	$\chi^2$	df	p
Educational Attainment	2.940	3	0.401
Living in the Living in the household	2.060	3	0.560
Blood Pressure	7.260	3	0.064
BMI	7.935*	3	0.047

Note: \*difference is significant when  $p \leq 0.05$

### ***Difference in the Health Status in terms of Emotional Well-Being***

The analysis of role limitations due to emotional problems revealed no significant difference across most demographic and health-related factors, including age ( $U=3116.500$ ,  $p=0.476$ ), sex ( $U=2620.500$ ,  $p=0.684$ ), civil status ( $U=1219.000$ ,  $p=0.900$ ), religious affiliation ( $U=1904.500$ ,  $p=0.295$ ), employment ( $U=2691.500$ ,  $p=0.148$ ), number of dependents ( $U=2930.500$ ,  $p=0.617$ ), family monthly income ( $U=519.500$ ,  $p=0.184$ ), educational attainment ( $\chi^2(3)=2.940$ ,  $p=0.401$ ), living in the household ( $\chi^2(3)=2.060$ ,  $p=0.560$ ), and blood pressure ( $\chi^2(3)=7.260$ ,  $p=0.064$ ). This suggests that these factors do not independently predict emotional well-being in this population. However, a significant difference was observed based on BMI, with overweight individuals reporting greater role limitations due to emotional problems compared to underweight individuals ( $\chi^2(3)=7.935$ ,  $p=0.047$ ). This finding aligns with existing literature, highlighting the complex relationship between weight status and emotional well-being [73,74]. Further research is needed to explore the mechanisms underlying this association and to develop targeted interventions to support the emotional well-being of individuals across different weight categories.

**Table 7. Difference in the Health Status in terms of Emotional Well-Being**

Variable	U	z	p
Age	3240.500	-0.266	0.791
Sex	2361.000	-1.345	0.179
Civil Status	1185.500	-0.303	0.762
Religious Affiliation	1886.500	-1.074	0.283
Employment	3045.500	-0.154	0.878
Number of dependents	2982.500	-0.297	0.766
Family monthly income	369.500*	-2.36	0.018
Variable	$\chi^2$	df	p
Educational Attainment	0.230	3	0.973
Living in the Living in the household	2.691	3	0.442
Blood Pressure	6.214	3	0.102
BMI	1.806	3	0.614

Note: \*difference is significant when  $p \leq 0.05$

### ***Difference in the Health Status in terms of Social Functioning***

The analysis of social functioning revealed no significant difference across most demographic and health-related factors, including age ( $U=3224.500$ ,  $p=0.718$ ), sex ( $U=2680.500$ ,  $p=0.849$ ), civil status ( $U=1237.000$ ,  $p=0.980$ ), religious affiliation ( $U=1994.500$ ,  $p=0.479$ ), number of dependents ( $U=2963.500$ ,  $p=0.681$ ), family monthly income ( $U=637.500$ ,  $p=0.646$ ), educational attainment ( $\chi^2(3)=4.637$ ,  $p=0.200$ ), living in the household ( $\chi^2(3)=0.860$ ,  $p=0.835$ ), blood pressure ( $\chi^2(3)=3.468$ ,  $p=0.325$ ), or BMI ( $\chi^2(3)=3.442$ ,  $p=0.328$ ). This suggests that these factors do not independently predict social functioning in this population.

However, a significant difference was observed based on employment status, with those without employment reporting significantly lower social functioning compared to those with employment ( $U=2584.500$ ,  $p=0.047$ ). This finding aligns with existing literature, which consistently shows that unemployment is associated with poorer health outcomes and lower quality of life [75,76,77,78]. The negative health effects of unemployment appear to be more pronounced for certain groups and social support may play a protective role in mitigating some of the adverse health impacts of unemployment [77,79]. This finding underscores the importance of considering employment opportunities and support systems for individuals facing unemployment as part of a comprehensive approach to health and well-being.

**Table 8. Difference in the Health Status in terms of Social Functioning**

Variable	U	z	p
Age	3224.500	-0.361	0.718
Sex	2680.500	-0.190	0.849
Civil Status	1237.000	-0.025	0.980
Religious Affiliation	1994.500	-0.709	0.479
Employment	2584.500*	-1.983	0.047
Number of dependents	2963.500	-0.411	0.681
Family monthly income	637.500	-0.46	0.646
Variable	$\chi^2$	df	p
Educational Attainment	4.637	3	0.200
Living in the Living in the household	0.860	3	0.835
Blood Pressure	3.468	3	0.325
BMI	3.442	3	0.328

Note: \*difference is significant when  $p \leq 0.05$

### ***Difference in the Health Status in terms of Energy/Fatigue***

The analysis of energy or fatigue levels revealed no significant difference across most demographic and health-related factors, including sex (U=2636.000, p=0.733), civil status (U=1210.000, p=0.862), religious affiliation (U=1956.500, p=0.421), employment (U=2973.000, p=0.677), family monthly income (U=602.000, p=0.495), educational attainment ( $\chi^2(3)=4.014$ , p=0.260), living in the household ( $\chi^2(3)=6.298$ , p=0.098), blood pressure ( $\chi^2(3)=2.169$ , p=0.538), and BMI ( $\chi^2(3)=1.176$ , p=0.759). This suggests that these factors do not independently predict energy levels in this population. However, significant differences were observed based on age and number of dependents. Older respondents reported significantly lower energy levels compared to younger respondents (U=2683.000, p=0.029), and those with more than three dependents reported significantly lower energy levels than those with three or fewer dependents (U=2507.000, p=0.045). These findings align with research suggesting that age and family structure play important roles in shaping energy levels and fatigue [80,81].

**Table 9.** *Difference in the Health Status in terms of Energy/Fatigue*

Variable	U	z	p
Age	2683.000*	-2.185	0.029
Sex	2636.000	-0.341	0.733
Civil Status	1210.000	-0.174	0.862
Religious Affiliation	1956.500	-0.804	0.421
Employment	2973.000	-0.416	0.677
Number of dependents	2507.000*	-2.002	0.045
Family monthly income	602.000	-0.68	0.495
Variable	$\chi^2$	df	p
Educational Attainment	4.014	3	0.260
Living in the household	6.298	3	0.098
Blood Pressure	2.169	3	0.538
BMI	1.176	3	0.759

Note: \*difference is significant when  $p \leq 0.05$

### ***Difference in the Health Status in terms of General Health Perception***

The analysis of general health perception revealed no significant difference across most demographic and health-related factors, including sex (U=2602.500, p=0.645), civil status (U=1232.500, p=0.962), religious affiliation (U=1836.500, p=0.194), employment (U=3053.000, p=0.897), number of dependents (U=2981.500, p=0.761), family monthly income (U=594.500, p=0.473), educational attainment ( $\chi^2(3)=3.060$ , p=0.382), living in the household ( $\chi^2(3)=1.710$ , p=0.635), blood pressure ( $\chi^2(3)=2.834$ , p=0.418), and BMI ( $\chi^2(3)=1.527$ , p=0.676). This suggests that these factors do not independently predict general health perception in this population. However, a significant difference was observed based on age, with younger respondents reporting significantly lower general health perception compared to older respondents (U=1988.000, p=0.000). This aligns with research findings that younger individuals may be more critical of their health or have different expectations compared to older individuals [82,83]. This finding highlights the importance of considering age-related differences in health perceptions for tailored healthcare interventions and communication strategies.

**Table 10.** *Difference in the Health Status in terms of General Health Perception*

Variable	U	z	p
Age	1988.000*	-4.508	0.000
Sex	2602.500	-0.461	0.645
Civil Status	1232.500	-0.047	0.962
Religious Affiliation	1836.500	-1.299	0.194
Employment	3053.000	-0.130	0.897
Number of dependents	2981.500	-0.305	0.761
Family monthly income	594.500	-0.72	0.473
Variable	$\chi^2$	df	p
Educational Attainment	3.060	3	0.382
Living in the Living in the household	1.710	3	0.635
Blood Pressure	2.834	3	0.418
BMI	1.527	3	0.676

Note: \*difference is significant when  $p \leq 0.05$

### ***Difference in the Health Status in terms of Health Change***

The analysis of health change perception revealed no significant difference across most demographic and health-related factors, including sex (U=2412.000,  $p=0.225$ ), civil status (U=1146.500,  $p=0.588$ ), religious affiliation (U=1759.000,  $p=0.092$ ), employment (U=3020.000,  $p=0.799$ ), number of dependents (U=2614.500,  $p=0.098$ ), family monthly income (U=508.000,  $p=0.156$ ), educational attainment ( $\chi^2(3)=0.413$ ,  $p=0.937$ ), living in the household ( $\chi^2(3)=1.085$ ,  $p=0.781$ ), blood pressure ( $\chi^2(3)=2.440$ ,  $p=0.486$ ), and BMI ( $\chi^2(3)=3.652$ ,  $p=0.302$ ). This suggests that these factors do not independently predict perceived changes in health in this population. However, a significant difference was observed based on age, with older respondents reporting a significantly greater decline in health compared to younger respondents (U=2641.500,  $p=0.017$ ). This aligns with research findings that age plays a significant role in shaping health perceptions and status among older adults [84,85,86,87]. This finding underscores the importance of considering age-related factors in health assessments and interventions for older adults.

**Table 11.** *Difference in the Health Status in terms of Health Change*

Variable	U	z	p
Age	2641.500*	-2.377	0.017
Sex	2412.000	-1.214	0.225
Civil Status	1146.500	-0.542	0.588
Religious Affiliation	1759.000	-1.683	0.092
Employment	3020.000	-0.254	0.799
Number of dependents	2614.500	-1.653	0.098
Family monthly income	508.000	-1.42	0.156
Variable	$\chi^2$	df	p
Educational Attainment	0.413	3	0.937
Living in the Living in the household	1.085	3	0.781
Blood Pressure	2.440	3	0.486
BMI	3.652	3	0.302

Note: \*difference is significant when  $p \leq 0.05$

The findings of this study partially align with the Social Determinants of Health (SDH) framework proposed by the WHO. The study population's predominantly low socioeconomic status, characterized by low education, unemployment, and reliance on social support, is

consistent with the SDH framework, which posits that socioeconomic factors significantly influence health outcomes. Additionally, limited access to healthcare, another social determinant, is also evident in this study. However, the findings also challenge certain aspects of the SDH framework, as participants reported good overall physical and emotional health despite facing socioeconomic disadvantages and limited healthcare access. This suggests that factors beyond socioeconomic status and healthcare access, such as strong social support systems, resilience, and coping mechanisms, might play a significant role in mitigating the adverse effects of these determinants.

Furthermore, the variations in health status based on age, employment status, family monthly income, and weight highlight the complex interplay of various social determinants. The negative impact of unemployment on social functioning underscores the importance of social participation and engagement for overall well-being. Similarly, the association between lower family monthly income and lower emotional well-being highlights the potential role of financial security in mental health. These findings suggest that a comprehensive approach addressing both socioeconomic factors and individual strengths is crucial for promoting health equity

## **6.0. Conclusion**

The findings suggest that while socioeconomic determinants of health (SDH) play a significant role in shaping health outcomes, their impact is not absolute. Individual resilience, social support, and coping mechanisms can mitigate the adverse effects of low socioeconomic status and limited healthcare access. This study emphasizes the need for a multi-faceted approach to health interventions. While addressing socioeconomic determinants is crucial for improving population health, it is equally important to strengthen individual and community resilience and promote social support networks. Additionally, the findings highlight the importance of tailored interventions that consider the specific needs and strengths of different populations. The study reveals that despite facing significant socioeconomic disadvantages, the study population demonstrates resilience and maintains a relatively good health status. This suggests that there are untapped resources and strengths within these communities that can be leveraged to improve health outcomes.

## **7.0. Limitations of the Findings**

The study's cross-sectional design limits causal inference and relies on self-reported health measures. The findings may not be generalizable beyond the specific region studied, and unmeasured confounding factors could influence results. The sample size, while sufficient, may not fully represent the entire population, warranting further research with larger, diverse samples and incorporating objective health assessments.

## **8.0. Practical Value of the Paper**

The findings of this study have several practical applications for health interventions and policy development in Guihulngan City and similar contexts. Targeted interventions can be designed to address the specific needs of vulnerable groups identified in the study, such as older individuals, those with low family monthly income, and the unemployed. These interventions could focus on promoting physical activity, providing mental health support, and creating social opportunities. Additionally, health education programs that are accessible and understandable for individuals with limited literacy are needed to raise awareness of prevalent health concerns and promote healthy behaviors. Furthermore, the study highlights the importance of social

support systems and improved healthcare access. Interventions could focus on strengthening existing social networks, creating new support groups, and promoting social engagement. Additionally, increasing the number of healthcare providers, establishing mobile clinics, or implementing telehealth services could improve access to healthcare. Finally, the findings can inform policy development at both the local and national levels, focusing on improving educational opportunities, promoting employment, providing financial support to low-income households, and improving access to healthcare services.

### **9.0. Directions for Future Research**

Future research should build upon this study's findings by conducting longitudinal studies to track health changes over time and qualitative research to understand individuals' experiences and coping mechanisms. Intervention studies should be designed to test the effectiveness of programs addressing the identified needs, and comparative studies in other regions could help determine the generalizability of these findings. Additionally, further investigation into protective factors like resilience and social support, as well as developing validated measures of social capital, could provide valuable insights. Research should also focus on generating evidence to inform policy decisions. This could involve evaluating existing policies and programs, identifying gaps, and developing evidence-based recommendations for policy reform. The goal is to create a more comprehensive understanding of health determinants and develop effective interventions to improve the well-being of populations facing socioeconomic challenges, such as those in Guihulngan City.

### **10.0. Declaration of Conflict of Interest**

The authors declare no conflict of interest.

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