

Original Research Article

The impact of socioeconomic and demographic factors on individuals' behaviour towards their health and general well-being in rural Sindh, Pakistan

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ABSTRACT

Background: Health and general well-being might sound like a mundane concept for most developed nations; however, it is not perceived similarly in underdeveloped areas of the developing nations. In Pakistan, the concept becomes even more foreign and muddled with certain stubborn biases which needs to be accessed. Therefore, we conducted a study to identify the impact of socioeconomic and demographic factors associated with behaviors regarding health and general well-being.

Methods: A cross-sectional study was conducted in rural health centers (RHCs) of five districts of Sindh, Pakistan, from October 2020 to December 2020. A survey questionnaire was designed to collect data on socio-economic and demographic factors and their impacts on behavior towards health and general well-being. Statistical analysis was performed using STATA Version 16.0. Chi-square test and logistic regression analysis were used to determine the extent of association between predictor variables and outcome variables.

Results: A total of 969 respondents participated in the study. The mean age of the respondents was 35.70 (\pm 13.17) years. Majority of the participants (82.77%) had limited access to the required health care facility and only (3.61%) of respondents reported that they regularly consult with disease specialists. Multivariable logistic regression revealed the ability to bear disease expenses (OR=0.55, p =0.009), level of education (OR=1.81, p =0.026), female gender (OR=0.30, p =0.048), access to required health facilities (OR=0.58, p =0.012) were significantly associated with positive behavior towards health and general well-being.

Conclusions: The study shows that ease of access to healthcare facilities would encourage the population to seek more healthy behaviors. Resources for promoting healthy lifestyle choices in the general population should be more comprehensive for encompassing cognitive beliefs that target psychological and physical health outcomes.

Keywords: Socio-economic factors, Demographic factors, Healthcare facilities, General well-being, Pakistan

INTRODUCTION

Healthy behaviors among the population rely heavily on their knowledge of the term general well-being, which

includes having positive emotions and moods (example-happiness), and the absence of emotions affecting one negatively (example- depression, anxiety). It is also being satisfied with life, a feeling of fulfillment with positive

functioning.¹ Healthcare practices have evolved exponentially over the last century. It was challenging to perform complicated surgeries without anesthesia until 1862, when it was first used; it is now a norm to perform open-heart surgery after a cardiac event.² However, this fast-paced change might have left many who do not understand the details of this development questioning its existence and, therefore, refusing its acceptance like the elderly in rural areas who have lived their lives by strict ancient codes.³ In most instances, this behavior may lead to ignorance towards the medical aid as the people who do not understand the essential nature of new medicines and high-end advance procedures would not agree to avail them even in dire situations.⁴

The people in rural areas have often been stigmatized with such an approach. It might just be that a stereotype with a mythical existence, but it is evident via several studies how prevalent negligence is among the people living in the outskirts of megacities. This behavior might have roots in their socio-economic background and sociodemographic front. The concern for their health is seen to be increasingly inclined towards the word of the elderly and what their ancestors have believed in.⁵ Their thought process has led them to be negligent towards many serious health conditions that can be prevented from being fatal. Studies have shown how not having ample knowledge about the healthcare facilities and access to these facilities in a rural setting causes the population to suffer from a lack of medical care.⁶

Studies have shown a positive relationship between low socio-economic conditions and medical ignorance.⁵ Low income leads to people being more focused on solving their everyday hardships and, therefore, less concerned by new technologies and what is going on in the world. This causes a lapse in knowledge which leads to ignorant behaviors in people.⁷ A Chinese study concluded that having limited means of provision may lead to not paying attention to the essential aspects of modern technology and healthcare advancements, and therefore ignorant behavior towards one's health and general well-being.⁸

The impact of socio-economic status on health behaviors goes deeper than merely seeking medical aid when needed. With higher economic burdens to maintain a basic lifestyle, studies have shown that it becomes nearly impossible to opt for healthy behaviors and lean towards harmful habits like tobacco use and other addictive behaviors.⁹⁻¹¹ Behaviors like exercise, a healthy diet, and a daily schedule that promotes health would require many elaborated finances than merely opting for a pack of cigarettes that eases up the mind alike.

Several studies have shown how various factors influence individuals' behavior towards their health and general well-being around the world. However, we have not been able to find a study that focuses on the socio-economic and demographic factors dictating health behavior, accessibility to healthcare facilities, and health

inequalities, particularly in a poor resource setting in rural areas in Pakistan. Presently, no study has been conducted which aids in analyzing the behavior of the rural population caring for their health and general well-being.^{3,6,12} Therefore, we aimed to ascertain the impact of socio-economic and demographic factors on healthcare behaviors in a deprived population like rural Sindh

METHODS

Study design and study setting

A cross-sectional study was conducted in rural health centers (RHCs) of five comparably similar districts of Sindh, Pakistan that include Badin, Thatta, Larkana, Nawabshah and Sukkur, from October 2020 to December 2020 after obtaining ethical approval from the Institutional ethical committee. The study was conducted in accordance with the Ethical Standards of the 1964 Helsinki Declaration and its Later Amendments or Comparable Ethical Standards. Before the commencement of the survey, verbal informed consent was obtained from all participants, and participants were also consented for the results to be published later.

RHCs are established in all districts at the sub-tehsil and tehsil levels in Sindh. Each RHC, on average, has 10 to 20 inpatient beds and it serves a population of 100,000 every year. RHCs were selected based on convenient sampling. Total 10 RHCs, 2 from each district, were selected for the purpose of data collection.

Sample size calculation

The prevalence of positive health behavior towards general health and well-being was assumed to be 50%, $d=0.1$, confidence level of 5%, $z=1.96$. According to $n = (z)^2 p (1-p)/d^2$, the sample size was calculated as 625 and by adding 50% of non-response rate, the initial sample size was 950 before the start of the field research. The participants for this study were recruited using a convenient sampling technique. It means all participants who fulfilled the eligibility criteria and were ready to be part of the study were recruited.

Study tool and data collection

The survey tool used for data collection composed of 3 sections. The first section consisted of basic demographic questions exploring participants' age, gender, religion, education, and other sociodemographic factors. The second section of the questionnaire assessed the factors associated with Individuals' behavior towards their health and general well-being by using a series of questions such as body mass index, addiction, regular walk, regular exercise, and consultation with disease specialist. All these questions were assessed using a 3-points score. A score of 3 shows the most healthy behavior, while a score of 1 shows unhealthy behavior. Total health behavior score was calculated based on the score of each individual

item. Participants who score more than or equal to the mean health behavior score were categorized as positive health behavior, while participants who score less than the mean health behavior score were classified as negative. The third part of the survey comprised of questions that explored the accessibility and affordability of healthcare facilities.

Study data were collected and managed using REDCap (Research Electronic Data Capture) tool. Initially, the questionnaire was developed in English language that was later translated into Sindhi (local language). Online training was provided to five data collectors, each belongs to different areas, to bring consistency with responses.

Statistical analysis

All statistical analysis were performed using STATA version 16.0. Mean and standard deviation was calculated for continuous variables, while frequency and percentages were calculated for categorical variables. In the initial stage, univariate analysis was done using the chi-square test for independence to assess the factors associated with individuals' behavior towards their health and general well-being and, the cut-off for p-value was kept at 0.25. All factors significantly associated in univariate analysis were included in the final model using multivariable logistic regression. For multivariable logistic regression, the cut-off of p-value was kept at 0.05 to assess the significant relationship between predictor variables and outcome variables.

RESULTS

A total of 969 responses were collected during the survey. Males constituted 98.25% (n=952) of the sample, with female comprised the only 1.75% (n=17). The mean age of the respondents was 35.70 (\pm 13.17) years. About three-fourth of the participants belonged to the Hindu religion, i.e., 738 (76.16%). In terms of education level, (26.63%) of the respondents did not attend any formal education while (13.11%) and (29.51%) attended primary and secondary, respectively.

With regard to income, (35.51%) of the participant reported monthly income of between PKR 3000 and 5000, (9.73%) of the families belonged to the lowest wealth quintile with less than PKR 3,000 monthly income while only (4.87%) reported more than PKR 20000. Nearly less than half of the respondents (43.65%) reported that they could bear disease expenses without difficulties. Furthermore, majority of the participants (82.77%) had limited access to the required health care facility. Socio-economic and demographic characteristics of the participants are presented in table 1.

The overall mean of respondents' behavior towards their health and general well-being is 8.46 (\pm 1.72). Based on the mean, positive and negative behavior of respondents were categorized. Almost (45.41%) of participants had a

positive behavior, while (54.59%) of participants were classified as having a negative behavior related to health and general well-being.

Table 1: Socio-economic and demographic characteristics of the participants.

Characteristics	N (%)
Age in years*	35.70 (\pm 13.17)
Gender	
Male	952 (98.25)
Female	17 (1.75)
Religion	
Hindu	738 (76.16%)
Muslim	231 (23.84%)
Level of education	
None	258 (26.63)
Primary	127 (13.11)
Secondary	286 (29.51)
Higher Secondary	167 (17.23)
Graduation	131 (13.52)
Total monthly household income	
Less than PKR 3000	94 (9.73)
PKR 3000-5000	343 (35.51)
PKR 5000-10000	229 (23.71)
PKR 10000-20000	253 (26.19)
More than PKR 20000	47 (4.87)
Disease expenses	
Bearable	423 (43.65)
Bearing with difficulties	358 (36.95)
Unbearable	188 (19.40)
Required healthcare facilities	
Fully available	65 (6.71)
Limited	802 (82.77)
Not available	102 (10.53)

The most common positive behavior is Body Mass Index (BMI), of the respondents (41.59%) have BMI within the normal range. Moreover, (36.64%) were involved in using cigarettes, alcohol, or other tobacco products. Only (3.61%) of respondents regularly consult with disease specialists and as shown in table 2.

To assess the factors associated with the positive behavior of respondents towards their health and general well-being, multivariable logistic regression was used. Before running multiple logistic regression, univariate analysis was done using the Chi-square test of independence. Variables significantly associated with positive behavior towards health and general well-being at univariate analysis include gender, educational status, total household income, required health facility access and the ability to bear disease expenses. All these variables were entered into the multivariable logistic regression. Table 3 shows the Independent factors associated with

individuals' behavior towards their health and general well-being.

Table 2: Characteristics assessing individuals' behavior towards their health and general well-being.

Characteristics	N (%)
Body mass index (BMI)	
Normal weight	403 (41.59)
Underweight/Overweight	424 (43.76)
Obese	142 (14.65)
Addiction	
None	277 (28.59)
Betel nuts	337 (34.78)
Cigarette, Alcohol, Tobacco or others	355 (36.64)
Regular walk >3 kilometers (km)	
Regular	56 (5.78)
Occasionally	48 (4.95)
Never	865 (89.27)
Regular exercise >30 minutes	
Regular	222 (22.91)
Occasionally	100 (10.32)
Never	647 (66.77)
Consultation with disease specialist	
Regular	35 (3.61)
Occasionally	460 (47.47)
Never	474 (48.92)

In multivariable logistic regression, the ability to bear disease expenses was significantly associated with the positive behavior towards health and general well-being. It means odds of positive behavior towards health and general well-being were 45% lower in people who face difficulties in bearing the expenses of treatment than people who can easily bear disease expenses (OR=0.55, p=0.009).

Secondly, educational status was also significantly associated with Positive behavior towards their health and general well-being. The odds of positive behavior towards health and general well-being were 1.81 times higher among the graduates (OR=1.81, p=0.026) than those who did not attend any formal education. Thirdly, gender was also significantly associated with positive behavior towards health and general well-being. The odds of positive behavior towards health and general well-being were 70% lower in males than females (OR=0.30, p=0.048). Lastly, access to required health facilities was also significantly associated with positive behavior towards health and general well-being.

The odds of positive behavior towards health and general well-being were 42% lower in people who had no availability of required health facilities as compared to the individuals with complete availability of necessary health facilities (OR=0.58, p=0.012) as shown in table 4.

Table 3: Univariate analysis of Independent factors associated with individuals' behavior towards their health and general well-being.

Factors	Behavior towards Health and general well-being		P value
	Positive (%)	Negative (%)	
Level of education			
None	127 (28.86)	131 (24.76)	0.001*
Primary	63 (14.32)	64 (12.10)	
Secondary	103 (23.41)	183 (34.6)	
Intermediate	65 (14.77)	102 (19.28)	
Graduation	82 (18.64)	49 (9.26)	
Required healthcare facilities			
Fully available	32 (7.27)	33 (6.24)	0.034*
Limited	350 (79.55)	452 (85.44)	
Not available	58 (13.18)	44 (8.32)	
Profession			
Unskilled labor	150 (34.09)	157 (29.68)	0.002*
Unemployed	69 (15.68)	68 (12.85)	
Skilled labor	33 (7.50)	69 (15.68)	
Shopkeeper	108 (24.55)	173 (32.70)	
Service	27 (6.14)	38 (7.18)	
Professional	53 (12.05)	37 (6.99)	
Total monthly household income			
Less than PKR 3000	50 (11.36)	44 (8.32)	0.010*
PKR 3000-5000	147 (33.41)	196 (37.05)	
PKR 5000-10000	114 (25.91)	115 (21.74)	

Continued.

Factors	Behavior towards Health and general well-being		P value
PKR 10000-20000	8 (22.27)	155 (29.30)	
More than PKR 20000	28 (6.33)	19 (3.66)	
Disease expenses			
Bearable	199 (45.23)	224 (42.34)	0.001*
Bearing with difficulties	135 (30.68)	223 (42.16)	
Unbearable	106 (24.09)	82 (15.50)	
Age (years)			
≤ 34	268 (50.66)	228 (51.82)	0.72
More than 34	261 (49.34)	212 (48.18)	
Gender			
Male	525 (99.24)	525 (99.24)	0.009
Female	13 (2.95)	4 (0.76)	

Table 4: Multivariable analysis of factors associated with individuals' behavior towards their health and general well-being.

Factors	AOR (95% CI)	P value
Disease expenses		
Bearable	Ref	0.009*
Bearing with difficulties	0.55 (0.35-0.86)	
Unbearable	1.1 (0.64-1.91)	
Level of education		
None	Ref	0.026*
Primary	1.09 (0.70-1.72)	
Secondary	1.37 (0.84-2.30)	
Intermediate	0.76 (0.48-1.19)	
Graduation	1.81 (1.07-3.07)	
Gender		
Female	Ref	0.048*
Male	0.30 (0.09-0.99)	
Required healthcare Facilities		
Fully Available		
Limited	0.73 (0.39-1.37)	0.012*
Not Available	0.58 (0.38-0.89)	

*P value of ≤ 0.05 kept significant for multivariable analysis

DISCUSSION

In a tumultuous era, such as this one where uncertainty regarding one's health is more prevalent than ever, it is essential for a developing country like Pakistan where most of the population lives with a rural lifestyle, to determine what are their behaviors towards health and general well-being. The assessment of such behavior in a presumably deprived population would give a sound idea regarding the measure of outcomes of such behaviors. Our study mainly focused on the socio-economic and demographic factors that enact and influence individuals' behavior towards their health and general well-being. Our study remained concentrated on the outcomes of factors

acting only on the population living in the outskirts of the megacities of Sindh province.

There were several factors highlighted that are affecting the behavior of the general population in those areas regarding their health and well-being. One such significant socio-economic factor was the affordability of medical procedures and treatment medicines. It was found that that the participants who were unable to pay their hospital bills or were not able to acquire the necessary medication for treatment would display a much ignorant behavior towards their health. The relationship between being able to bear the medical expenses and negative health behavior was seen to be positive which is in line with a study conducted in 2014 focusing on hassles in seeking medical services for health issues among the families that cannot bear the expenses due to their low income. The study also highlighted that having a limited means to bear the medical expenses results in negative behavior towards health.¹³

Not being able to bear the expense of medical treatments can also be attributed to the limited means of income in a household, which is another one of the socio-economic factors significant and affecting the outcomes of our study. Low income directly affects peoples' behavior towards their health and well-being as they need to preserve their limited economic resources for more essential necessities, similar to a 1996 study conducted to assess the effects of income on health behaviors.¹⁴ Health becomes somewhat a secondary objective to focus and would only get attention in times of emergency, as cited by a study conducted in China.¹⁵ Understandably, household income would directly affect one's approach to healthy behavior as there is a scarcity of free-of-cost healthcare facilities.

Household income also affects the level of formal education of the respondents, which again affects the health behaviors of the populace. It was observed that out of all the participants, those who have acquired a graduate level of education would show much positive behavior towards their health and well-being compared to those

who have had little or no formal education. This attribute can be seen in several studies where education, and more importantly, health education, results in positive behaviors among the people rather than those with little to no education regarding the importance of positive health behavior and well-being.¹⁶⁻¹⁸

Gender also influenced the health behaviors of the respondents of the survey. It was observed that men were more likely to have a positive health behavior and a fine idea of their general well-being than females. This outcome can be an indication of gender disparities which are much prevalent among the rural population of Sindh, where a male is dubbed as the head of the family and has more opportunities for health and education than a female.¹⁹ Though one of the limitations of our study is the cohort of female respondents, which is exponentially lower in number than the male participants; therefore, any indication towards a difference of behavior might not be a just representation of both the sexes in question.

Access to a healthcare facility is also a factor acting influential in the behaviors towards health and general well-being. A healthcare facility is not always an available option for the population living in the rural areas of Sindh, which can be a reason that the participants of the study presented with ignorant and negative behaviors towards their health. A review done on the healthcare services available and peoples' behavior towards the availability of a healthcare facility has shown that people who have access to a healthcare facility are more likely to present with a much positive behavior towards their health and well-being.²⁰ However, our data shows a contrast of results, the majority of the participants in our study showed negative behaviors towards their health despite having a full-time healthcare facility for their aid. This behavior can be rooted in their archaic beliefs and low health literacy.

The more significant number of the participants in our study were financially struggling; however, it indicated that a vast majority was involved in various addictive behaviors, which is a negative behavior towards one's health. The addictions involved were alcohol, betel nuts, cigarettes and other forms of tobacco use. The finding is in contrast with Ettner's study where it was found that there was an increased alcohol consumption in the populations among the families with higher income which in turn affected their health negatively. This could be due to the cultural and religious differences among the sample population. Ours was conducted in an Islamic rural Sindh in Pakistan with most of the population having little or no education- heavily relying on religious teachings- while the other one had their data collected from the National Survey of Families and Households, the Survey of Income and Program Participation from the University of Wisconsin-Madison, in the United States of America, a developed country with lesser religious influence on the daily lives of the sample population.²¹

Health behaviors and the concept of general well-being might still be foreign to the sample population included in our study. It could be the reason that the majority of our respondents showed ignorant and negative behaviors towards timely medical intervention to their health issues which can help them recover much faster.

CONCLUSION

The study concludes that access to healthcare services will encourage the population to indulge in healthy behaviors like seeking medical care. Reliable, valid and brief measures need to be executed in rural healthcare centers to identify people at risk for adverse physical and mental health outcomes. Resources for promoting healthy lifestyle choices in the general population should be more comprehensive for encompassing cognitive beliefs that target psychological and physical health outcomes. We also recommend that government should introduce healthcare and health insurance policies for underdeveloped areas to reduce the inequalities in available healthcare services.

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