

To Assess the Perception of rural population of Julkey Village about their own general, physical, mental and emotional health

MUHAMMAD WAQAR¹, MINAHIL FATIMA², ZOYA MOAZZAM³, MUHAMMAD SAMI MASOOD⁴, FATIMA ZIA⁵, KANZ-UL IMAN⁶

¹Medical Officer, Health Keen Clinic

²Postgraduate Resident, Postgraduate Medical Institute PGMI, Lahore

³Postgraduate Resident, Postgraduate Medical Institute PGMI, Lahore

⁴Demonstrator, Department of Physiology, Shalamar Institute of Health Sciences Lahore

⁵Medical Doctor, Rawalpindi Medical University

⁶House Officer, Central Park teaching Hospital Lahore

Correspondence to: Minahil Fatima, Email: fminahil02@gmail.com, Cell: 03327752959

ABSTRACT

Background: Perception about different aspects of health including general, physical, mental and emotional health plays a pivotal role in implementation of more efficient health service provision. The rural population of Pakistan has low literacy rate which is one of the major predisposing factors of decreased health awareness among them.

Methods: A cross-sectional study based on verified sf-36 questionnaire for the measurement of general, physical, mental and emotional health status among rural population was conducted during December 2021 till May 2022 in Julkey village, Lahore.

Results: A total of 256 individuals participated in our study with 163 males and 93 females having mean age of 36.95 ± 12.81 SD (in years). The sample consisted of 30% from age group 15-30, 65% from age group 31-60 and 4% from 61+ age group. While inquiring about general health 57.1% males and 49.5% females defined their health as excellent. Limitation of physical activities in females was more than males. Emotional health of males was better than females and majority of the participants considered themselves as a happy person. Only 1.8% males and 5.6% females think they feel tired all of the time. Interestingly, strong association of general health and limitation of activities with age was seen with p value of 0.00.

Conclusion: A large proportion of sample had a good perception about their health. However, creating more health issues awareness and better health care facilities can improve the situation further.

Keywords: Rural Population, Physical and Mental Health, Emotional Health, General Health

INTRODUCTION

Health is a basic fundamental right of every individual. Being healthy is an understanding of how your body works and what are its requirements to remain in the best optimum state. World Health Organization (WHO) defines health as a state of complete physical, mental and social well-being and not only the absence of disease or infirmity. The WHO further clarifies health as a resource for everyday life and not the objective of living.¹ Health should be considered as an optimistic approach that emphasizes not only social and personal resources but also points up one's physical capacities.

Health services in many countries are in turmoil. Many governments perceive that health is just another commodity to be bought and sold therefore, less attention is being paid to the real health issues of general population.² In developing countries, health systems must be planned in a way to deal efficiently with the backlog of common infectious diseases, reproductive health problems, and malnutrition while also developing affordable and effective interventions for non-communicable diseases³.

Health literacy is the ability of people to have knowledge about their health that allows them to take action for the prevention of communicable diseases. Provision of all the needed health information to individuals and families, motivating them to implement them in daily life, enhancing communication with providers, and facilitating peer-to-peer communication are various factors that are required to improve health literacy rate in a community.⁴ With growing awareness of health literacy being integral to health, there is a need to add a more comprehensive set of policies, programs, and conditions that promote healthy habits and facilitate individuals to make healthy choices. Countries should integrate health awareness policies in their health care system.

The Literacy rate of an area plays a vital role in creating health awareness. According to a recent economic survey of 2020, 62.84 percent of Pakistan's population resides in rural area out of which only 52% are literate.⁵ Awareness regarding health is consequently lower in rural areas of Pakistan.

The SF-36 Health Survey questionnaire is a broadly used form to measure health-related quality of life and a promising new tool for health perception evaluation in a general population. It is easy to use, acceptable and fulfills stringent criteria of reliability and validity.^{6,7} The SF-36 was designed for use in clinical practice and research, health policy analyses, and general population surveys.

The SF-36 is a multi-item scale that evaluates eight health dimensions of an individual that are physical activities limitation due to health problems; reduced social activities due to physical or emotional problems; restriction in usual role activities due to physical health problems; bodily pain; general mental health (psychological distress and well-being); restriction in usual role activities due to emotional problems; energy; and general health.⁸

Health awareness covers physical, psychological, emotional and social aspects of health. It is an integral part of health system that plays a key role in approaching and accessing health care facilities and hence promotes a society of healthy individuals. The purpose of this study is to find out the health perception of the adult population residing in a Pakistani village.

The objective of the study was to assess the perception of rural population of Julkey village about their own general, physical, mental and emotional health⁹.

MATERIALS AND METHODS

The cross-sectional study design was used to evaluate the health status among the general population in the setting of Julkey village located in district Lahore. The study was held for 6 months from December 2021 to May 2022. The sample size comprised of 256 participants, including all males and females aged between 15 to 60 years. The non-probability convenience sampling technique was used in our study for data collection by using a structured validated questionnaire. It consisted of SF-36 Health Survey Questionnaire (Urdu version) translated in Urdu by linguistic expert. Informed written consent was taken from the participants included in our study before data collection using interview method. IBM SPSS version 23 was used for data entry and analysis after coding all data. Results were calculated by using Descriptive statistics, which are presented as tables, consisting of

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frequency distribution and percentages. Bar charts are made to display results further. Chi square test is applied to see the association between socio-demographic variables and sf-36.

RESULTS

The data was collected from 256 participants living in Julkey village, Punjab. The mean age of the participants was 36.95±12.81 SD (years). About 64% of the participants were male and remaining 36% were female. When inquired about the overall general health from participants 68 out of 163 males and 30 out of 93 females labelled it as excellent (figure 1). While answering about their health as compared to the previous year most of the males and females considered their present health much better now (figure 2). Significant association between emotional problems and gender was seen in our study with p-value of 0.034. Furthermore, comparing general health among different age groups most of the participants from 31-60 age group perceived their health as excellent while most among 61+ age group thought of their health as poor (figure 7). Strong association of age with current general health and one year ago health was found in our study survey with the p value of 0.00. Notable association was also seen between body pain and pain interfering normal routine work with age.

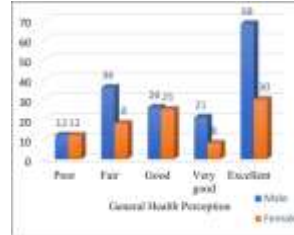


Figure: 1

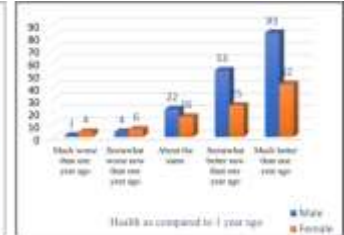


Figure: 2

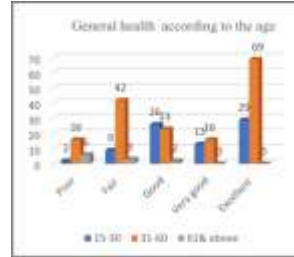


Figure 6

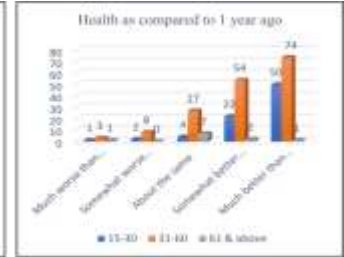


Figure 7

Table 1: Association of general health with gender

Questions Asked	Gender	Definitely false		Mostly false		Don't know		Mostly true		Definitely true		P – value
		N	%	N	%	N	%	N	%	N	%	
Become ill easier than others	Male	73	44.8	11	6.7	43	26.4	26	16.0	10	6.1	.27
	Female	34	36.6	14	15.1	24	25.8	15	16.1	6	6.5	
As healthy as anybody I know	Male	36	22.1	7	4.3	36	22.1	26	16.0	58	35.6	0.05
	Female	33	35.5	8	8.6	19	20.4	10	10.8	23	24.7	
My health to get worse	Male	69	42.3	11	6.7	51	31.3	26	16.0	6	3.7	.287
	Female	33	35.5	10	10.8	23	24.7	22	23.7	5	5.4	
My health is excellent	Male	5	3.1	31	19.0	20	12.3	15	9.2	93	57.1	.38
	Female	6	6.5	16	17.2	12	11.8	13	14.0	46	49.5	

p-value < 0.05 is significant, p- value > 0.05 is non-significant

Table 2: Association of Limitation of Activities with gender

Variables asked	Limitations	Male %		Female%		P – Value
		N	%	N	%	
Vigorous activities	a lot	48	29.4	37	39.8	0.074
	little	72	44.2	28	30.1	
	not at all	43	26.4	28	30.1	
Moderate activities	a lot	45	27.6	32	34.4	0.43
	little	75	46.0	36	38.7	
	not at all	43	26.4	25	26.9	
Lifting bags	a lot	42	25.8	30	32.2	0.016
	little	77	47.2	27	29.0	
	not at all	44	27.0	36	38.7	
Climbing several steps of ladder	a lot	64	39.3	35	37.6	0.486
	little	59	36.2	29	31.2	
	not at all	40	24.5	29	31.2	
Climbing one step of ladder	a lot	65	39.9	31	33.3	0.435
	little	39	23.9	21	22.6	
	not at all	59	36.2	41	44.1	
Bend or kneel	a lot	71	43.6	35	37.6	0.05
	little	47	28.8	19	20.4	
	not at all	45	27.6	39	41.9	
Walk more than a mile	a lot	95	58.3	50	53.8	0.741
	little	39	23.9	26	28.0	
	not at all	29	17.8	17	18.3	
Walk many blocks	a lot	89	54.6	34	36.6	0.021
	little	33	20.2	27	29.0	
	not at all	41	25.2	32	34.4	
Walk one block	a lot	86	52.8	34	36.6	0.04
	little	36	22.1	28	30.1	
	not at all	41	25.2	31	33.3	
Taking Bath	a lot	86	52.8	32	34.4	0.002
	little	5	3.1	0	0.0	
	not at all	72	44.2	61	65.6	

P-value < 0.05 is significant, p- value > 0.05 is non-significant

Table 3: Association of gender with Physical health problems and Emotional health problems

Questions Asked	Answers	Male		Female		P – value
		N	%	N	%	
Cut down time spent on work due to problem in physical health	Yes	119	73.0	54	58.1	0.01
	No	44	27	39	41.9	
Accomplished less due to physical health problem	Yes	69	42.3	50	53.8	0.07
	No	94	57.7	43	46.2	
Reduced work due to physical health problem	Yes	69	42.3	51	54.8	0.05
	No	94	57.7	42	45.2	
Difficulty performing tasks due to physical health problem	Yes	36	22.1	19	20.4	0.75
	No	127	77.9	74	79.6	
Cut down time spent on work due to emotional problem	Yes	72	44.2	46	49.5	0.41
	No	91	55.8	47	50.5	
Accomplished less due to emotional problem	Yes	59	36.2	49	52.7	0.01
	No	104	63.8	44	47.3	
Didn't work carefully as usual due to emotional problem	Yes	37	22.7	25	26.9	0.52
	No	126	77.3	68	73.1	

p-value < 0.05 is significant, p-value > 0.05 is non-significant

Table 4: Association of gender with energy and emotions

Questions Asked	Gender	Never		Little bit		Some times		Many times		Most of the time		All of the time		P – value
		N	%	N	%	N	%	N	%	N	%	N	%	
Did you feel full of pep	Male	10	6.1	18	11.0	13	8	21	12.9	17	10.4	84	51.5	0.298
	Female	11	11.8	10	10.8	8	8.6	18	19.4	10	10.8	36	38.7	
You been a very nervous person	Male	22	13.5	88	54.0	23	14.1	16	9.8	13	8.0	1	0.6	0.04
	Female	24	25.8	33	35.5	18	19.4	8	8.6	8	8.6	2	2.2	
Nothing could cheer you up	Male	15	9.2	93	57.1	6	3.7	28	17.2	14	8.6	7	4.3	0.05
	Female	17	18.3	37	39.8	4	4.3	17	18.3	15	16.1	3	3.2	
Felt calm and peaceful	Male	2	1.2	10	6.1	18	11.0	25	15.3	8	4.9	100	61.3	0.01
	Female	2	2.2	9	9.7	11	11.8	10	10.8	16	17.2	45	48.4	
Lot of energy	Male	3	1.8	17	10.4	9	5.5	14	8.6	22	13.5	98	60.1	0.17
	Female	1	1.1	11	11.8	13	14.0	4	4.3	15	16.1	49	52.7	
Felt downhearted and blue	Male	14	8.6	91	55.8	20	12.3	26	16.0	11	6.7	1	0.8	0.32
	Female	10	10.8	40	43.0	12	12.9	23	24.7	6	6.5	2	2.2	
Did you feel worn out	Male	15	9.2	87	53.4	18	11.0	35	21.5	7	4.3	1	0.6	0.16
	Female	13	14.0	43	46.2	15	16.1	13	14.0	6	6.5	3	3.2	
Have you been a happy person	Male	0	0.0	9	5.5	10	6.1	15	9.2	23	14.1	106	65.0	0.05
	Female	3	3.2	7	7.5	9	9.7	6	6.5	20	21.5	48	51.6	
Past 4 weeks, time your physical health or emotional problems interfered social activities	Male	19	11.7	30	18.4	46	28.2	59	36.2	7	4.3	2	1.2	0.46
	Female	12	12.9	12	12.9	34	36.6	29	31.2	6	6.5	0	0	
Did you feel tired	Male	6	3.7	85	52.1	32	19.6	19	11.7	18	11	3	1.8	0.19
	Female	9	9.7	42	45.2	16	17.2	13	14.0	8	8.6	5	5.4	

p-value < 0.05 is significant, p-value > 0.05 is non-significant

Table 5: Association of general health with age

Questions Asked	Age Groups	Definitely false		Mostly false		Don't know		Mostly true		Definitely true		P – value
		N	%	N	%	N	%	N	%	N	%	
Get sick a little easier than other people	15 – 30	39	49.4	16	20.3	16	20.3	6	7.6	2	2.5	0.000
	31 – 60	67	40.4	8	4.8	49	29.5	29	17.5	13	7.8	
	61 & above	1	9.1	1	9.1	2	18.2	6	54.5	1	9.1	
As healthy as anybody I know	15 – 30	32	40.5	9	11.4	8	10.1	6	7.6	24	30.4	0.000
	31 – 60	36	21.7	5	3.0	45	27.1	25	15.1	55	33.1	
	61 & above	1	9.1	1	9.1	2	18.2	5	45.5	2	18.2	
My health to get worse	15 – 30	34	43	16	20.3	17	21.5	9	11.4	3	3.8	0.000
	31 – 60	67	40.4	5	3.0	54	32.5	33	19.9	7	4.2	
	61 & above	1	9.1	0	0	3	27.3	6	54.5	1	9.1	
My health is excellent	15 – 30	1	1.3	4	5.1	8	10.1	16	20.3	50	63.3	0.000
	31 – 60	8	4.8	36	21.7	22	13.3	12	7.2	88	53.0	
	61 & above	2	18.2	6	54.5	2	18.2	0	0	1	9.1	

p-value < 0.05 is significant, p-value > 0.05 is non-significant

Table 6: Association of Limitation of Activities with age

Variables asked	Age group	Limited alot		Little Limited		Not Limited		P – Value
		N	%	N	%	N	%	
Vigorous activities	15 – 30	25	31.6	13	16.5	41	51.9	0.000
	31 – 60	59	35.5	77	46.4	30	18.1	
	61 & above	1	9.1	10	90.9	0	0	
Moderate activities	15 – 30	20	25.3	20	25.3	39	49.4	0.000
	31 – 60	56	33.7	81	48.8	29	17.5	
	61 & above	1	9.1	10	90.9	0	0	
Lifting or carrying groceries	15 – 30	21	26.6	11	13.9	47	59.5	0.000
	31 – 60	49	29.5	85	51.2	32	19.3	
	61 & above	2	18.2	8	72.7	1	9.1	
Climbing several flights of stairs	15 – 30	23	29.1	17	21.5	39	49.4	0.000
	31 – 60	72	43.4	64	38.6	30	18.1	
	61 & above	4	36.4	7	63.6	0	0	
Climbing one flight of stairs	15 – 30	20	25.3	15	19	44	55.7	0.001

Perception of rural population

	31 – 60	69	41.6	41	24.7	56	33.7	
	61 & above	7	63.6	4	36.4	0	0	
Bending, kneeling, or stooping	15 – 30	26	32.9	12	15.2	41	51.9	0.000
	31 – 60	76	45.8	47	28.3	43	25.9	
	61 & above	4	36.4	7	63.6	0	0	
Walking more than a mile	15 – 30	35	44.3	15	19	29	36.7	0.000
	31 – 60	103	62	46	27.7	17	10.2	
	61 & above	7	63.6	4	36.4	0	0	
Walking several blocks	15 – 30	27	34.2	11	13.9	41	51.9	0.000
	31 – 60	90	54.2	44	26.5	32	19.3	
	61 & above	6	54.5	5	45.5	0	0	
Walking one block	15 – 30	26	32.9	10	12.7	43	54.4	0.000
	31 – 60	90	54.2	48	28.9	28	16.9	
	61 & above	4	36.4	6	54.5	1	9.1	
Bathing or dressing yourself	15 – 30	26	32.9	0	0	53	67.1	0.009
	31 – 60	88	53	5	3.0	73	44	
	61 & above	4	36.4	0	0	7	63.6	

p-value < 0.05 is significant, p-value > 0.05 is non-significant

Table 7: Association of age with Physical health problems and Emotional health problems

Questions Asked	Age group	Yes		No		P – value
		N	%	N	%	
Cut down time spent on work due to physical health problem	15 – 30	61	77.2	18	22.8	0.003
	31 – 60	109	65.7	57	34.3	
	61 & above	3	27.3	8	72.7	
Accomplished less due to physical health problem	15 – 30	46	58.2	33	41.8	0.027
	31 – 60	70	42.2	96	57.8	
	61 & above	3	27.3	8	72.7	
Limited work due to physical health problem	15 – 30	48	60.8	31	39.2	0.011
	31 – 60	67	40.4	99	59.6	
	61 & above	5	45.5	6	54.5	
Difficulty performing the work due to physical health	15 – 30	13	16.5	66	83.5	0.407
	31 – 60	39	23.5	127	76.5	
	61 & above	3	27.3	8	72.7	
Cut down time spent on work due to emotional health	15 – 30	45	57.0	34	43.0	0.044
	31 – 60	67	40.4	99	59.6	
	61 & above	6	54.5	5	45.5	
Accomplished less due to emotional health	15 – 30	48	60.8	31	39.2	0.00
	31 – 60	56	33.7	110	66.3	
	61 & above	4	36.4	7	63.6	
Didn't work carefully as usual due to emotional health	15 – 30	20	25.3	59	74.7	0.673
	31 – 60	39	23.5	127	76.5	
	61 & above	3	27.3	8	72.7	

p-value < 0.05 is significant, p-value > 0.05 is non-significant

Table 8: Association of age with energy and emotions

Variables Asked	Age Groups	Never		Little bit		Sometime		Many times		Most of the time		All of the time		P – value
		N	%	N	%	N	%	N	%	N	%	N	%	
Did you feel full of pep	15 – 30	16	20.3	15	19.0	6	7.6	8	10.1	6	7.6	28	35.4	0.000
	31 – 60	5	3.0	12	7.2	13	7.8	28	16.9	16	9.6	92	55.4	
	61 & above	0	0	1	9.1	2	18.2	3	27.3	5	45.5	0	0	
You been a very nervous person	15 – 30	32	40.5	33	41.8	8	10.1	2	2.5	4	5.1	0	0	0.000
	31 – 60	14	8.4	88	53.0	29	17.5	21	12.7	12	7.2	2	1.2	
	61 & above	0	0	0	0	4	36.4	1	9.1	5	45.5	1	9.1	
Nothing could cheer you up	15 – 30	19	24.1	35	44.3	2	2.5	12	15.2	7	8.9	4	5.1	0.021
	31 – 60	12	7.2	92	55.4	8	4.8	30	18.1	19	11.4	5	3.0	
	61 & above	1	9.1	3	27.3	0	0	3	27.3	3	27.3	1	9.1	
Felt calm and peaceful	15 – 30	0	0	4	5.1	8	10.1	7	8.9	8	10.1	52	65.8	0.048
	31 – 60	4	2.4	13	7.8	20	12.0	23	13.9	15	9.0	91	54.8	
	61 & above	0	0	2	18.2	1	9.1	5	45.5	1	9.1	2	18.2	
Lot of energy	15 – 30	0	0	5	6.3	5	6.3	3	3.8	13	16.5	53	67.1	0.000
	31 – 60	4	2.4	16	9.6	16	9.6	14	8.4	23	13.9	93	56.0	
	61 & above	0	0	7	63.6	1	9.1	1	9.1	1	9.1	1	9.1	
Felt downhearted	15 – 30	16	20.3	37	46.8	12	15.2	11	13.9	3	3.8	0	0	0.000
	31 – 60	8	4.8	94	56.6	15	9.0	34	20.5	13	7.8	2	1.2	
	61 & above	0	0	0	0	5	45.5	4	36.4	1	9.1	1	9.1	
Did you feel worn out	15 – 30	19	24.1	40	50.6	11	13.9	6	7.6	2	2.5	1	1.3	0.000
	31 – 60	9	5.4	90	54.2	19	11.4	37	22.3	9	5.4	2	1.2	
	61 & above	0	0	0	0	3	27.3	5	45.5	2	18.2	1	9.1	
Have you been a happy person	15 – 30	1	1.3	5	6.3	4	5.1	2	2.5	17	21.5	50	63.3	0.170
	31 – 60	2	1.2	10	6.0	13	7.8	18	10.8	22	13.3	101	60.8	
	61 & above	0	0	1	9.1	2	18.2	1	9.1	4	36.4	3	27.3	
In last 4 weeks, time physical or emotional problems interfered social activities	15 – 30	17	21.5	18	22.8	18	22.8	23	29.1	3	3.8	0	0	0.000
	31 – 60	13	7.8	21	12.7	60	36.1	63	38.0	8	4.8	1	0.6	
	61 & above	1	9.1	3	27.3	2	18.2	2	18.2	2	18.2	1	9.1	
Did you feel tired	15 – 30	12	15.2	46	58.2	14	17.7	3	3.8	1	1.3	3	3.8	0.000
	31 – 60	3	1.8	81	48.8	30	18.1	27	16.3	21	12.7	4	2.4	
	61 & above	0	0	0	0	4	36.4	2	18.2	4	36.4	1	9.1	

p-value < 0.05 is significant, p-value > 0.05 is non-significant

DISCUSSION

In this paper, norms for the Short Form 36 (SF36) are presented in a random sample; representative of the general rural Pakistani population. Anchoring health-related quality of life (HRQOL) measures in general population make clinical interpretations more meaningful and in accordance with practice in other fields of medicine. The functional scales (physical functioning, role emotional, and social functioning) primarily measure disability, whereas the vitality, mental health, and bodily pain scale primarily measure well-being.⁹

The aim of this study is norming for the translation of SF-36 across nations and cultures as well as establishing norms for future comparisons among various populations in different settings. These norms could serve as anchors for interpretation of scores, for example gender-specific cohorts in cross-sectional studies. They could also be helpful in interpreting the clinical significance of observed changes in prospective studies.

In our study we assessed the association of gender and age with the variables of sf-36 questionnaire. Most of the associations between age and sf-36 variables were found significant (table 5,6 and 8).

According to our survey, females were found to have more limitations to vigorous (40%) and moderate (34%) activities as compared to males that were 29.5% and 28% respectively (table 3). Moreover, we found that 100% of age group 61 and above had limited vigorous and moderate activities; whereas 82% of age group 31-60 and 49% of age group 15-30 showed limitation of activities.

Our study found that emotional health problems were more prominent in females (43%) in contrast to males (34%) as most of the females were unable to work efficiently due to lack of emotional well-being. According to age group our results showed poor emotional health perception in age group 15-30(48%) as compared to age group 31-60(32%) and 61 above (31%).

In our study majority of the males and females considered themselves as a happy person (79% and 73% respectively). When seen in association to age group; 85% of individuals between age of 15-30 regarded themselves happy, followed by age group 31-60(74%), and 61 above (64%). This showed the positive approach and the contentment of this population. A latest study in Srilanka showed slightly better mental health in males as compared to females which was seen in our study as well.¹⁰This survey also analyzed the general energy and emotions of the participants. 62% of males and 49.5% of females felt themselves full of pep. While comparing the various age groups, the energy levels were highest in age group 31-60(65%).

According to studies, mental and physical health are two components of health required to maintain perfect equilibrium to achieve the best health related quality of life and each component has 50 percent of its share in doing so.¹¹

Before interpreting the results of current study, several limitations must be considered. First, sample of this study was relatively small. Second, inadequate understanding and interpretation of questions asked to the participants due to poor literacy rate of selected area although we tried our best to explain well with the help of native fellow.

This Normative study would be beneficial for monitoring spatial and time trends in the health of the population, assess the effects of implementation of new health and social policies in a setting and allocation of resources according to the requirements in a specific population.¹²

CONCLUSION

Health related quality of life among local rural population of julkeri village is satisfactory. However, it can be improved further by promoting awareness regarding health issues and upgrading health care facilities in those areas.

Conflict of interest: None

REFERENCES

1. <https://medlineplus.gov/definitions/generalhealthdefinitions.html>
2. Saracci R. The World Health Organisation needs to reconsider its definition of health. *Bmj*. 1997 May 10;314(7091):1409
3. WHO Ad Hoc Committee on Health Research Relating to Future Interventions Options. Investing in health research and development. Summary. Geneva: WHO, 1996.
4. Teutsch SM, Herman A, Teutsch CB. How a population health approach improves health and reduces disparities: the case of head start. *Preventing chronic disease*. 2016;13.
5. <https://tradingeconomics.com/pakistan/rural-population-percent-of-total-population-wb-data.html>
6. Brazier JE, Harper R, Jones NM, O'Cathain A, Thomas KJ, Usherwood T, Westlake L. Validating the SF-36 health survey questionnaire: new outcome measure for primary care. *BMJ*. 1992 Jul 18;305(6846):160-4. doi: 10.1136/bmj.305.6846.160. PMID: 1285753; PMCID: PMC1883187.
7. Megari K. Quality of life in chronic disease patients. *Health psychology research*. 2013 Sep 24;1(3).
8. Ware JE Jr, Sherbourne CD. The MOS 36-item short-form health survey (SF-36). I. Conceptual framework and item selection. *Med Care*. 1992 Jun;30(6):473-83. PMID: 1593914.
9. HÅvard Loge J, Kaasa S. Short form 36 (SF-36) health survey: normative data from the general Norwegian population. *Scandinavian journal of social medicine*. 1998 Oct;26(4):250-8.
10. Triantafyllou P, Nas Z, Zavos HM, Sumathipala A, Jayaweera K, Siribaddana SH, Hotopf M, Ritchie SJ, Rijdsdijk FV. The aetiological relationship between depressive symptoms and health-related quality of life: A population-based twin study in Sri Lanka. *PLoS one*. 2022 Mar 30;17(3):e0265421
11. Lins L, Carvalho (2016), ". FM SF-36 total score as a single.
12. Ebrahim S. Clinical and public health perspectives and applications of health-related quality of life measurement. *Social science & medicine*. 1995 Nov 1;41(10):1383-94.