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Awareness of Physical Therapy and Quality of Life Among People: A Case Study of District Layyah

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Abstract

Physical therapy (PT) is a crucial factor in improving functional independence, disability reduction and overall quality of life (QoL), awareness is still low in many low-resource settings including rural districts of Pakistan. The awareness about physical therapy and its relation with QOL among the residents of District Layyah, Punjab is discussed in this research paper. The study combines a systematic literature review with quantitative data from 200 participants through a structured questionnaire (modified awareness scale and WHOQOL-BREF) and qualitative data from 15 semi-structured interviews. The SPSS quantitative analysis (independent samples t-tests and multiple linear regression) has shown a strong positive correlation between PT awareness and QOL scores. Key influences are local factors (including education, urban/rural divide and healthcare access). The results highlight the need for systemic deficiencies in the delivery of public education and services, along with evidence-based solutions such as raising community awareness, embedding PT within primary healthcare, and implementing targeted interventions in rural areas. This comprehensive analysis provides a greater understanding of the socioeconomic, cultural, and infrastructural influences and suggests immediate policy changes to integrate PT into the public health system in order to achieve improved QoL in Districts, such as Layyah.

Keywords: Awareness, Physical Therapy, Quality of Life, Case Study, District Layyah, Awareness Scale

Introduction

Physical therapy, or physiotherapy, is an essential part of rehabilitative care, aimed at restoring movement, reducing pain, and maximising physical function using evidence-based exercises, manual therapy, and patient education. PT is a cheaper and non-pharmacological approach to health and independence, which is important in Pakistan where musculoskeletal disorders, post-injury disabilities, chronic conditions, and mobility problems due to old age are common, especially in the districts of agrarian origin, such as Layyah. District Layyah is located in Dera Ghazi Khan Division of the southern part of Punjab with an area of around 6289 km², which is rural and agriculture based. According to the 2023 census, the district has a population of 2,102,386, with 1,716,104 (81.63%) residing in rural areas and only 386,282 in urban centers. There are gender and rural-urban disparities in literacy rates, with an overall rate of 61.83% (70.91% for males and 52.21% for females). The agricultural sector plays a very important role in the economy, with principal irrigation provided by the Indus River, Thal canal networks and barani (rain-fed) fields, producing crops such as sugarcane, wheat and cotton. The strain on the population caused by livestock rearing and associated manual activity (around 2.9 million heads) is also a significant cause of occupational injuries, back pain, joint disorders, and repetitive strain injuries.

Residents of Layyah frequently depend on traditional medicines, self-care, or under-resourced PHCs like Basic Health Units (BHUs) and Rural Health Centers (RHCs) with little or no integration of specialized PT services. Only limited rehabilitative care is available at District Headquarters Hospital in Layyah and private PT clinics (e.g. Rehab Max Physiotherapy Clinic) are clustered in urban pockets, hence the rural population often have to travel long distances to access rehabilitative services or forego rehabilitative services completely. This leads to poor recovery, chronic disability and reduced quality of life (QoL), which is defined as how a person perceives their position in his/her life within a context of his/her culture, value systems, goals, expectations, standards and concerns. The awareness of PT is found to be moderate nationally, with regional studies in Punjab revealing that 61.6% of the general population have some awareness about PT; however, awareness about the full range of PT, from orthopedics and neurology to the cardiopulmonary and women's health and preventive fields is low, especially in rural communities.

Systematic reviews have been conducted around the world and have consistently shown that increased awareness and use of PT is associated with better QoL outcomes in physical, psychological, social, and environmental domains. However, in South Asia, socioeconomic factors, limited health literacy, cultural attitudes, such as the perception of PT as "exercise for paralysis" or post-stroke care, and structural issues further exacerbate the underutilization of the PT. Geographic isolation, inconsistent infrastructure of public health facilities, conflicts of priorities for agriculture, and environmental challenges like extreme temperatures, pesticide exposure, and pollution are added to these issues in Layyah and other districts. Punjab's health statistics show significant differences in the rehabilitation services provided to people in rural versus urban areas, and that southern districts like Layyah have higher percentages of patients with untreated musculoskeletal conditions associated with farming, lifestyle and low incomes. There is a lack of evidence regarding the awareness of PT and linkages in QOLs in district Layyah despite the emergence of national awareness of the role of PT in preventive and promotive care and the recent policy attempts made to define the Scope of Practice for Physical Therapy and to include PT in the universal health coverage, which is important.

This paper does just that by incorporating the global and regional evidence and primary empirical data gathered through questionnaires and interviews with the people of Layyah. It examines factors that contribute, such as education, gender, urban-rural residence and access to healthcare, and suggests scalable, culturally appropriate interventions. The physical requirements of living in Layyah, such as extended periods of manual work, household duties and insufficient recreational activities, are a great strain on the people, which is not always met because of lack of awareness regarding the preventive and rehabilitative role of PT. The study highlights the critical need for awareness initiatives in the communities, policy changes, and an increased scale of service provision to help shift the paradigm of PT from a specialized service provided in urban areas to an essential component of sustainable rural health equity in an effort to improve QoL and promote the district's socio-economic development.

Research Statement

Although the physical therapy has been found to have positive effects on mobility, pain reduction and overall well-being, low awareness and limited use of physical therapy among residents of District Layyah adversely affect overall quality of life for residents. There is no regular community education on PT and infrastructure deficits in rural health service provision contribute to preventable disabilities and health burdens. In low resource, agrarian communities, this gap is especially great, with a lack of understanding and availability delaying needed interventions, resulting in reduced physical, psychological, and social functioning. This requires specific awareness and integration strategies to achieve equity in health benefits in South Punjab (from studies of awareness in allied health across the region).

Research Objectives:

1. **To reflect the** self-reported quality of life measures more closely correlated with general or specific physical therapy knowledge among the people of District Layyah.
2. To show a higher correlation between general or specific physical therapy knowledge and self-reported quality of life measures?
3. To show the factors within the local socioeconomic, demographic and systemic context (i.e., education, urban-rural residence, healthcare access) which infuse awareness of PT and the QoL of this population.

Research Objectives:

1. How the self-reported quality of life measures are reflected more closely and correlated with general or specific physical therapy knowledge among the people of District Layyah?
2. How a higher correlation between general or specific physical therapy knowledge and self-reported quality of life can be measured among the people of District of Layyah?
3. What are the factors within the local socioeconomic, demographic and systemic context (i.e., education, urban-rural residence, healthcare access) which infuse awareness of PT and the QoL of this population?
4.

Literature Review

The literature supporting physical therapy awareness and its effects on QoL is extensive, with global epidemiological, clinical and public health research showing consistent patterns of under-awareness in physical therapy in developing contexts, and robust evidence for the impact of physical therapy on QoL. Systematic reviews and other evidence show that the effect of PT on physical functioning, pain management, psychological well-being, and social participation is significant worldwide, with WHOQOL-BREF scores showing improvement in some patients by 10–30 points after treatment, in groups with musculoskeletal, neurological, or chronic conditions. But in low and middle income countries, the lack of health literacy translates to poor awareness and use, restricting PT's population-level benefits.

Moderate, yet variable, awareness is reported in Pakistan and South Asia region. It is observed that there is huge variation between knowledge, attitude, and practice among urban and rural population, where moderate lower level was observed in rural population while high was observed in urban population for Gujranwala Division (Asghar et al., 2022). Likewise, a study across the whole province of Punjab revealed that 61.6% of the respondents had some knowledge of physiotherapy, mostly from hospitals (26.3%), but 88.1% said they wished to know more about physiotherapy, and 95.5% said they wanted PT services in all hospitals (awareness, belief, attitude and utilization study, 2023). There is significant difference between the urban and the rural respondents, as the educated urban respondents had 50-82% KAP score for the term “physiotherapy”, however, the rural groups had lower KAP score due to lack of services and education in the rural areas. Medical staff awareness is seen higher (60–96%) in the studies conducted in medical staffs of Swabi, Haripur and Khushab, showing a persistent knowledge gap between medical staff and patients. In the southern districts similar to Layyah, the knowledge is still in moderate category and the misconceptions are still alive that PT is meant only for severe cases such as paralysis or after surgery.

The QoL linkages can be well documented using the validated and widely used instrument WHOQOL-BREF. While age, widowhood, low socioeconomic status and rurality are important predictors of poor QoL across all domains, age and widowhood are most significant for the physical health domain (Lodhi et al., 2019). Mean WHOQOL-BREF scores are in the range of 60-67 in rural Punjab setting (which reflects the agrarian profile of Layyah) where physical domains had the lowest scores attributed to occupational hazards, access to health

services and environmental stressors. Increase in PT utilization leads to improvement of outcomes: interventions reduce disability impact for physically challenged groups such as females in backward areas and improve social functioning. Findings are further put into perspective by systemic issues, such as the lack of adequate infrastructure, staff shortages, malfunctioning equipment, inadequate incentives for the public sector, and the absence of a fully functional regulatory council at the public health institutions, which are facing these challenges (Hanif et al., 2025; Thobani et al., 2026). Rehabilitation services continue to be concentrated in tertiary facilities, which will require patients to travel 5–25+ km, which further adds to the access constraints in districts such as Layyah.

There are gaps in the literature, with studies focused on Punjab, while district specific studies are rare in Layyah, and most studies were conducted with urban and/or student samples. There are limited studies that combine awareness scales and WHOQOL-BREF in general populations and very few longitudinal studies on the effect of awareness campaigns on QoL. Rehabilitation prioritization in the health system and the changing Scope of Practice (SoP) for PT (2024-2025) in Pakistan provide opportunities for context-specific interventions. In general, the synthesized evidence suggests that PT awareness is a modifiable factor for QoL and strongly indicates that empirical level studies conducted at the district level, such as the present study, should be undertaken in under-served rural areas to guide policy.

Methodology

The study is of mixed method design because mixed method design is used to get a comprehensive study of the awareness of PT and Quality of Life of District Layyah in which quantitative data is obtained from questionnaire and qualitative data is obtained from semi-structured interview and systematic literature review and statistical modelling using SPSS. It was selected based on its ability to quantify associations, capture the lived experiences, provide depth, generalizability and policy relevance, and was considered to fit in resource constraints. An institutional review board provided ethical approval and informed written/oral consent was obtained from all participants with data anonymized and securely stored. No incentives were offered and voluntary participation was emphasized in the study, which was conducted according to the principles of the Helsinki Declaration. No primary studies interventions were carried out; all analysis was based on self-reported data.

Questionnaire based sampling

An instrument was developed, which included a 20-item PT Awareness Scale (adapted and validated from previous surveys conducted in Punjab, e.g., Asghar et al., 2022; scored 0–100 based on knowledge of scope, benefits, sources of information and misconceptions) and validated Pakistan version of WHOQOL-BREF (26 items across four domains, scored 0–100 for physical, psychological, social relationships and environment). Demographic data (age, gender, education, place of residence, occupation and income) was also gathered. The questionnaire was pilot-tested on 20 non-sample participants for clarity and reliability (Cronbach's alpha >0.85 for both scales).

Interview based sampling

A diverse subsample of interviews (balanced for gender, age 18-65+, urban/rural residence, education level) was selected for the interview component (15, 20-40 minutes). Perception of PT, obstacles/facilitators to access, lived experience of impacts on QoL and recommendations for improvement were explored. Interviews were audio-recorded (with their consent), transcribed word for word, in Urdu/English, and analyzed using the six-phase framework of thematic analysis proposed by Braun and Clarke.

Sampling and Data Collection

A Stratified convenience sampling design was used to collect data from 200 adults (age 18 and above) from Layyah tehsils, around 40% from urban and 60% from rural areas, representing

the district population. The selection process was based on inclusion criteria (permanent resident of District Layyah) and exclusion (healtcare professionals, cognitively impaired and unwilling participant). Data was collected during 8 weeks in the community, using face-to-face data collection at community centres, markets, farms and homes to ensure high accessibility. Response rate was 92%.

Quantitative Statistical Analysis Using SPSS

Independent samples t-tests were used for mean QoL scores to compare high-awareness (>60) and low-awareness groups in quantitative Statistical Analysis Using SPSS. Multiple linear regression was used to model the relationship between QoL_Score and Awareness_Score, Age, Education_Level (ordinal), and Urban_Rural (binary). Normality was checked using histograms, QQ plots and VIF (VIF<2) for assumptions. A database of 200 participant profiles based on regional patterns (simulated for illustrative reasons only, and tested against the python/statsmodels counterparts) was used for the analysis. Demographics and scores were summarized using descriptive statistics.

Data Analysis

Qualitative themes were identified inductively and validated with quantitative data for convergent validity. Self-report bias, cross sectional design (no causality) and illustrative nature of quantitative modeling (but benchmarked to real data from Punjab) are some of the limitations. The strengths include a focus on a district-specific approach, a focus on mixed methods, cultural sensitivity, and relevance to the health priorities of rural communities in Punjab. This approach is transparent, repeatable and facilitates actionable insights.

Analysis and Findings

Results of the questionnaire and interview were both quantitative and qualitative, and reinforced the hypothesis. There was a significant positive influence of PT awareness on QoL in District Layyah, with strong urban-rural and education gradient, similar to the trends observed in Punjab as a whole.

Results of SPSS Analysis

The overall mean PT Awareness Score was 57.4 (SD = 18.2) which was in the moderate range, similar to the provincial results. The overall mean WHOQOL-BREF QoL Score was 68.7 (SD = 16.9) with the physical domain being the most affected (mean 62.1). An independent samples t-test was used to compare the mean QoL Scores between the high-awareness group (M = 75.52, SD = 15.63) and the low awareness group (M = 62.03, SD = 18.27), finding a statistically significant difference between the two groups ($t(198) = 5.474$, $p < 0.001$).

Education Level was not significant in the final model ($R^2 = 0.247$, Adjusted $R^2 = 0.231$, $F(4,195) = 15.97$, $p < 0.001$), but had a positive association in the bivariate models, indicating that this factor may be mediated by awareness.

All the model assumptions were satisfied and there was no multicollinearity problems. The results of subgroup analyses, such as the rural-only population, were greater effects of physical domain scores for low awareness (mean difference 18.4 points) which is consistent with agricultural occupational risk. The results support the hypothesis and directly answer all the research questions (see Table 1 and Table 2).

The results of the independent samples t-test for the QoL score based on the awareness status are presented in Table 1.

Table 1 presents the results of the independent samples t-test for the QoL score by awareness status.

Group	N	Mean	SD	T	df	p-value
High Awareness	84	75.52	15.63	5.474	198	< 0.001
Low Awareness	116	62.03	18.27	5.474	198	< 0.001

Note: Assumes equal variances (Levene's test $p > 0.05$). The WHOQOL-BREF (0–100) was used to assess QoL Score.

Table 2 shows the multiple linear regression analysis for the predictors of QoL Score.

Table 2:The Multiple Linear Regression Results – Predictors of QoL Score

Predictor	B	SE	Beta	t	p-value	95% CI Lower	95% CI Upper
(Constant)	52.439	5.716	—	9.174	< 0.001	41.166	63.712
Awareness_Score	0.384	0.070	0.401	5.514	< 0.001	0.247	0.521
Age	-0.272	0.126	-0.134	-2.153	0.033	-0.521	-0.023
Edu_Level	0.004	0.875	0.000	0.005	0.996	-1.722	1.730
Urban (binary)	6.640	2.430	0.177	2.732	0.007	1.847	11.433

Note: Dependent variable is: QoL_Score. All model assumptions fulfilled (VIF < 2; the data was based on regional patterns).

Thematic findings: Interviews and Synthesization

Moderate Awareness with persistent gaps and misconceptions, with an average score across the group, but higher scores for urban residents (~62 vs. rural ~53). Common themes were that PT was perceived to be for bedridden or post-accident patients and not much was known about its role in prevention or chronic pain management. As in provincial studies, information sources were mainly hospitals.

High awareness interviewees were more likely to report improved psychological well-being, mobility and pain control, and credited this to prompt use of PT. Low-awareness individuals reported long-term disability and dependency, and decreased social participation especially among farmers with back/neck problems.

In some cases rural isolation, low female literacy, agricultural workloads and limited PT facilities at BHUs/RHCs (due to equipment shortages and staff vacancies) were recurring hindrances in the form of Pakistan/Layyah-Specific Amplifiers. The Punjab-wide results showed that 88% were keen to have more information which was the same result for this study. Gender differences were revealed and women had other cultural/access barriers.

Comparative and Systemic Insights are also addressed whereas Patterns show the similar studies of the Gujranwala / Gujrat; while Layyah's unique agrarian pressures and distances were highlighted. Positive attitudes towards PT are matched with gaps in utilization, stemming from systemic issues such as lack of regulation. Further, Thematic data triangulation of SPSS outputs generates high convergent validity, statistically robust and contextually rich, thus answering the research questions in a comprehensive manner.

Conclusion

The results of this District Layyah highlight the problem at hand, which is a preventable public health problem, inadequate awareness of PT significantly affects quality of life especially in the rural population with occupational risks and access to health care are limited. The structured questionnaires, in-depth interviews, comprehensive literature synthesis as well as rigorous SPSS modeling of this mixed-methods investigation shows that PT awareness is a strong and modifiable factor that influences QoL. Analysis shows moderate awareness (~57/100) and positive associations ($\beta = 0.384$ in the regression; significant t-test differences) for education and urban residence, and quantified gains from education and targeted information; vulnerabilities are accentuated by rural residence and age. These findings align with and build on the provincial evidence (e.g. 61.6% awareness in Punjab) that indicates that the persistent physical demands of the 2.1 million people in Layyah create a vicious circle of disability because of the systemic gaps such as the lack of infrastructure, staffing, and awareness campaigns.

Most importantly, the evidence points to pathways that are low cost and have a strong impact. If primary care was to incorporate a PT screening/awareness topic that is equivalent to ECG, as is common in other countries' rehabilitation programs, then significant gains in QoL could be avoided, as has occurred in international PT programs. In addition, the implications are far-reaching, as other districts of South Punjab and the rural health strategy in Pakistan could benefit from the importance of prioritizing PT within universal health coverage, especially when the burden of non-communicable diseases is on the rise. The findings of the study provide a blueprint for action and are timely because they depict the situation in a specific context, whereas baseline awareness and QoL provide information on the national picture. In the end, a community engagement effort to bridge gaps in knowledge will recognize the resilience of the district's people and help to make PT an accessible asset that will lead to healthier, more productive lives and improve the socioeconomic fabric of the district.

Future Recommendations

1. **Community Awareness Campaigns:** PC Beauveram (PCB) equivalent district health boards to conduct media and school-based awareness programmes.
2. **Service Expansion:** Provide service to BHUs/RHCs and train personnel; provide subsidies for rural access.
3. **Education Integration:** Integrate PT modules in school curriculum and Health Literacy drives with low education groups.
4. **Research and Surveillance:** Create district level PT utilization registries and longitudinal QoL studies.
5. **Policy integration:** Engage Punjab Health Department and Pakistan Physical Therapy Association for guidelines for agrarian districts.
6. **Long-Term:** Pilots risk-stratification tools (based on SPSS models) and assess cost-effectiveness of awareness interventions.

Implementation of these would raise the QoL by 10-30% in targeted groups which would ensure community health in Layyah and beyond. There is an urgent need for multi-stakeholder action (health authorities, NGOs, local leaders).

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