Dialogue Social Science Review (DSSR)
www.thedssr.com

ISSN Online: 3007-3154
ISSN Print: 3007-3146

DIALOGUE SOCIAL SCIENCE REVIEW

Vol. 4 No. 2 (February) (2026)

# A Workforce Demographic Profile of Para-Medical Personnel in Pakistan: Age, Gender, Education, Specialization, Experience, Salary, and Family Characteristics

**Hina Jabbar**
Department of Applied Psychology, The Islamia University of Bahawalpur
Email: hinajabbar377@gmail.com

**Arslan Khalid***
Assistant Professor, Department of Applied Psychology, The Islamia University of Bahawalpur RYK Campus. Corresponding Author, Email: arslan.khalid@iub.edu.pk

## ABSTRACT
Para-medical workers are an important part of the healthcare systems, especially in developing nations where allied health workers are maintaining vital diagnostics and therapeutic services. With all the centrality, limited studies have been conducted on thorough demographic profiling of para-medical staff in Pakistan. This research was an attempt to give a systematic workforce demographics of para-medical staff employed in healthcare facilities in Pakistan. Data collection was done on 2,043 para-medical professionals by using a cross-sectional descriptive research design. Demographic factors divided into age, gender, educational level, specialization, work experience, wage scale, and marital status. The descriptive statistics were calculated to analyze the workforce composition. Findings showed that the workforce consisted mostly of young-to-mid career workers with almost half of the participants forming a central age distribution and equal gender balance. Most of the them possessed diploma or professional technical qualifications with a relatively small number possessed higher academic qualifications. The distribution of work experience indicated that workers were concentrated between early and middle career stages and their salary results indicated a moderate-income distribution that has few prospects of financial growth. A majority of the participants (more than half of the participants) were married and with family obligations. The results present the background workforce information that guides the human resource planning, compensation policy, educational development pathways, and future occupational health studies in the healthcare sector of Pakistan.

**Keywords:** Para-Medical Personnel, Healthcare Workforce, Demographic Profile, Allied Health Professionals, Pakistan, Workforce Planning

## Introduction
Healthcare systems are complicated networks of services and they do not only depend on physicians and nurses and even para-medical staff that offer the necessary diagnostic, therapeutic, emergency, laboratory, and rehabilitative services. The allied health workforce is a significant portion of the para-medical staff that are crucial in continuity and efficiency in patient care delivery (World Health Organization [WHO], 2022). As pandemic countries like Pakistan, the healthcare system has structural limitations, workforce deficit, and resource scarcity; the para-medical professionals also form an irreplaceable operational support of hospitals and other healthcare facilities.
In spite of their significance, empirical studies in Pakistan have laid inordinate emphasis

ISSN Online: 3007-3154
ISSN Print: 3007-3146



on the physicians and nurses and comparatively little emphasis on para-medical staff. Occupational health policy, workforce planning and human resource reforms demand proper demographic profiling to direct evidence based decision-making (Buchan and Aiken, 2008). The age distribution, gender representation, educational attainment, work experience, and compensation levels are demographic factors that have an impact on job performance, occupational stress exposure, career growth opportunities, and the retention trends (Maslach and Leiter, 2016; Schaufeli et al., 2009).

Knowledge of the workforce demographics is particularly important in the case of the occupational stress and burnout studies. The demographic variables tend to serve as background determinants that influence the exposure to work demands and availability of resources. As a case in point, young workers might be more adaptable but less secure in their jobs, middle employees might have more family issues and work pressure. On the same note, job satisfaction and turnover intentions may be affected by salary differences and educational constraints (Leiter and Maslach, 2009).

In Pakistan, the healthcare industry is hindered by the same issue as workforce maldistribution, insufficient professional development avenues, wage inequalities, and resource deficit in the institution (Ahmed et al., 2021). Nevertheless, scanty information on demographic distribution of the para-medical staff is found in large-scale empirical data. The interventions of policy reforms and occupational well-being cannot be contextual without systematic demographic profiling.

The current paper handles this gap by offering a detailed demographic profile of para-medical staff in Pakistan on a large sample (N = 2043). The paper can be regarded as a preliminary descriptive study that can be used to conduct more comprehensive studies on occupational stress, burnout, and psychological capital of healthcare professionals.

**Literature Review**

The crisis in the global health workforce has been used to emphasize the significance of a complex system of demographic monitoring (WHO, 2022). The demographics of the workforce have direct impact on the continuity of service, efficiency of the institution and access to healthcare. Systematic workforce mapping has proven to be better in resource distribution and sustainability over time (Buchan and Aiken, 2008).

In low and middle-income countries, there are poor demographic databases that impede evidence-based workforce planning. The healthcare system of Pakistan is marked by a large number of patients and limited resources, and to make sure that the service delivery is balanced, the workforce should be assessed with precision.

Age structure gives an idea about the maturity of the workforce and sustainability in the future. Younger labor forces have potential to serve long-term service, although that might need continuous training investments. On the other hand, the problem of succession planning is posed by aging workforces (Leiter and Maslach 2009). The studies have revealed that the mid-career health care workers are those who tend to have peak occupational demands because of augmented responsibility and supervisory functions.

Migration and aging of workforce in the context of developing healthcare systems may cause the critical service shortages. Thus, to plan strategically, age distribution of para-medical is necessary.

The occupation of healthcare sectors in the world is gender-based. In spite of the fact that nursing as a profession is predominantly female, technical and diagnostic occupations tend to have mixed or male-dominated occupational distribution (WHO, 2022). Gender equity has impact in wage structures and promotional opportunities and climate at the

ISSN Online: 3007-3154
ISSN Print: 3007-3146



workplace.

Gender norms may identify the employment participation and progress in the sociocultural context of Pakistan. The even distribution of genders in para-medical professions can be seen as a sign of the growing inclusivity of the workforce, but gender equality in leadership and compensation can be found only when the balance in terms of the number of representatives is achieved (Khan and Jafree, 2019).

The level of education has a strong relationship with job performance, specialization of skills and career development. Most of the allied health professions are based on the training on diploma level; nevertheless, postgraduate development opportunities are scarce in several developing countries (Ahmed et al., 2021). Inadequate educational mobility could limit professional growth and cause professional stagnation.

Career stage distribution and professional expertise is indicated by work experience. Employees who are in their early career stages tend to be highly motivated with low autonomy, whilst employees who are mid-career have higher responsibility and pressure of work (Maslach and Leiter, 2016). The patterns of retention and turnover are also informed by the experience distribution.

Pay is still one of the foremost predictors of job satisfaction and turnover intentions. Poor pay systems tend to be a contributor to migration and labor turnover (Schaufeli et al., 2009). The issue of profiling of salaries is therefore a fundamental tool in determining economic sustainability of healthcare employment.

The healthcare professions entail the shift tasks and emotional work, which enhances the chances of work family conflict (Greenhaus and Beutell, 1985). Stress exposure and engagement in work depend on marital status and number of dependents. Knowledge of family demographics helps in interpretation of the occupational well-being research in context.

## Method

### Research Design

The current study utilized a cross-sectional descriptive research design that was used in an attempt to conduct a systematic study of the demographic variables of the para-medical personnel working in the healthcare institutions based in Pakistan. It was considered that a descriptive method was the most suitable, as the main aim was to map the workforce characteristics but not test the causal hypotheses.

### Participants

The sample of the study was 2,043 para-medical employees of the public and private medical institutions. The respondents were a representation of various allied health specializations. The sample size is huge, which increases the representativeness and statistical stability of descriptive estimates.

### Sampling Strategy

Institutional access procedures were the means of recruiting the participants. Para-medical staff in the healthcare facilities were approached and invited to participate voluntarily. Inclusion criteria included the participants who were working in para-medical jobs in healthcare institutions.

### Measures

A demographic survey was conducted on a structured questionnaire. The measuring tool gathered categorical information on the age (four categories), gender (two categories),

Dialogue Social Science Review (DSSR)
www.thedssr.com

ISSN Online: 3007-3154
ISSN Print: 3007-3146

DIALOGUE SOCIAL SCIENCE REVIEW

Vol. 4 No. 2 (February) (2026)

educational level (five categories), specialization (13 categories), experience at the workplace (four categories), salary range (four categories), and the number of categories marital status (four categories). The questionnaire was set to bring out workforce-related demographic indicators in line with human resource planning structures.

**Procedure**

The collection of data was performed on an institutional level. The objectives of the study and the guarantees of confidentiality were explained to the participants beforehand. The questionnaires were filled out willingly during institutional meetings. Throughout the process of conducting the research, ethical standards were taken into account.

**Data Analysis**

Statistical software was applied in data analysis. The frequencies and percentages used to give descriptive statistics were calculated. Findings have been provided in APA 7 formatted tabular formats and then deciphered.

**Results**

The aim of the current research was to ensure the description of the overall demographic picture of para-medical staff working at the healthcare facilities in Pakistan. In a bid to attain this goal, descriptive statistical analyses were done on demographic variables such as age, gender, education attainment, specialization, work experience, salary bracket, and marital status. To present the workforce distribution profile with the accurate description of the sample 2,043 people were chosen and frequencies and percentages were calculated. These are as shown in APA 7 format tables below and then all the demographic variables are then subjected to interpretation.

**Age Distribution**

**Table 1**

Age Distribution of Para-Medical Personnel (N = 2043)

| Age Category | Frequency | Percentage |
|---|---|---|
| 1 | 408 | 20.00 |
| 2 | 988 | 48.70 |
| 3 | 445 | 21.85 |
| 4 | 202 | 9.90 |

Note. Percentages are based on total sample size (N = 2043).

Table 1 demonstrates that the largest age group in the workforce is the Age Category 2 (almost half of the respondents 48.70). The Age Category 3 forms 21.85 of the total number of participants with 20.00 the Age Category 1. The proportion of the population that falls within the Age Group 4 is only 9.90%, which means that the upper age group in the population is represented in a relatively small percentage of the workforce.

The age distribution implies that the para-medical workforce in Pakistan has a high concentration in the early-to-mid career stages. The relatively low percentage between the highest age group implies low short-term threat of retirement and a well-structured long-term service potential of the workforce.

Dialogue Social Science Review (DSSR)
www.thedssr.com

ISSN Online: 3007-3154
ISSN Print: 3007-3146

DIALOGUE SOCIAL SCIENCE REVIEW

Vol. 4 No. 2 (February) (2026)

**Gender Distribution**

**Table** **2**

Gender Distribution of Participants (2043)

| Gender | Frequency | Percentage |
|---|---|---|
| Male | 1031 | 50.50 |
| Female | 1012 | 49.5 |

Note. Percentages are calculated based on N = 2043.

The gender balance of the participants is almost 50- 50, with men taking half of 50.50 and women 49.5. The variation due to the male and female representation is marginal (0.5 percent) which shows equal gender representation in para-medical duties.

The results indicate that there is gender equality in the para-medical labour force with implications of inclusive hiring method and equal representation between the genders.

**Educational Attainment**

**Table** **3**

Educational Qualifications of Participants

| Education Category | Frequency | Percentage |
|---|---|---|
| Category 1 | 42 | 2.10 |
| Category 2 | 467 | 22.90 |
| Category 3 | 186 | 9.10 |
| Category 4 | 1265 | 61.9 |
| Category 5 | 83 | 4.15 |

Note. N = 2043.

Education Category 4 has the highest number of participants (61.9 %) and is, therefore, the predominant educational level in the workforce. The percentage of the Categories 2 is 22.90, Categories 1 and 5 comprise 2.10 and 4.15, respectively.

The workforce seems to be concentrated on the diploma or professional level qualification (Category 4) and it seems the higher academic level qualifications are not well represented. This trend implies high levels of technical training and low levels of postgraduate specialization.

**Work Experience**

**Table** **4**

Work Experience Distribution

| Experience Category | Frequency | Percentage |
|---|---|---|
| Category 1 | 884 | 43.30 |
| Category 2 | 925 | 45.35 |
| Category 3 | 185 | 9.1 |
| Category 4 | 49 | 2.4 |

Note. N = 2043.

Most of the participants are clustered around Experience Categories 1 and 2 which both have a total of 88.63 percent of the sample. The percentage of those who belong to the Category 4 is only 2.40, which means there are not many long-term professionals.

The para-medical employees consist of young to middle-aged careerists with a very low number of experienced senior members.

Dialogue Social Science Review (DSSR)
www.thedssr.com

ISSN Online: 3007-3154
ISSN Print: 3007-3146

DIALOGUE SOCIAL SCIENCE REVIEW

Vol. 4 No. 2 (February) (2026)

**Salary Distribution**

**Table** **5**

Salary Bracket Distribution

| Salary Category | Frequency | Percentage |
|---|---|---|
| Category 1 | 835 | 40.9 |
| Category 2 | 978 | 47.9 |
| Category 3 | 137 | 6.70 |
| Category 4 | 93 | 4.6 |

Note. N = 2043.

Almost half of the respondents (47.9) are concentrated in the category Salary 2 and 40.9 in the category 1. It is only 4.6 percent in the highest salary bracket.

The pay system indicates average income with small upward financial growth indicating that the compensation might be constrained.

**Marital Status**

**Table** **6**

Marital Status of Participants

| Status Category | Frequency | Percentage |
|---|---|---|
| Category 1 | 865 | 42.3 |
| Category 2 | 1164 | 57.0 |
| Category 3 | 9 | 0.45 |
| Category 4 | 5 | 0.25 |

Note. N = 2043.

Most of the respondents (57.0) fall on the category 2 (married) and 42.3 on category 1.

**Discussion**

The current research offers one of the most profound demographic evaluations regarding para-medical staff in Pakistan, which will be able to bring empirical data regarding workforce demographics in terms of age, gender, level of education, specialization, working experience, salary system, and family traits. The results have shown that the workforce is composed of mainly young-to-mid career employees, sex is equal, the qualification is concentrated at diploma levels, there is moderate clustering of wages, and the family demands are high. These population shifts have significant implications on workforce sustainability, human resource planning as well as occupational wellbeing research.

**Age Structure and Sustainability of Workforce.**

The age distribution shows that almost half of the participants are in the central age bracket and the highest age bracket is represented relatively small. This trend is an indicator that the para-medical labor force in Pakistan is constituted by young to middle age career professionals. In workforce planning terms, the presence of such a demographic composition is also promising, since it means a prospect of long-term service and minimization of short-term retirement risk. The World Health Organization (2022) highlights that balanced age distribution is the key to the stability of the healthcare system and avert the sudden shortage of the workforce.

Nevertheless, the low percentage of older staffing can also reflect the possible turnover or migration patterns. The migration of skilled professionals to other more well-paying

ISSN Online: 3007-3154
ISSN Print: 3007-3146



regions or countries is a common occurrence in the development of healthcare systems (Ahmed et al., 2021). In the event of lower representation of the senior para-medical professionals because of migration or stagnant career development, this may jeopardize institutional knowledge transfer. Sustainability of workforce needs a robust base in early careers in addition to keeping the seasoned professionals that can provide mentorship and high level of expertise (Buchan and Aiken, 2008).

Moreover, in the mid-career, there is a tendency of more work demands, as a person has to do more work, and more supervision (Leiter and Maslach, 2009). This career level is characterized by a high concentration of the staff, so this group can become especially important in future research on the topic of occupational stress and burnout.

**Occupational Equity and Gender Representation.**

The almost balanced gender proportions in the sample are indicative of the positive trends in the inclusivity of the workforce. In a lot of countries, healthcare industries are characterized by gender segregation, and they have technical and allied positions in which there may be an imbalance with one gender (WHO, 2022). The current study indicates that the degree of parity is possible to imply that para-medical jobs in Pakistan can offer comparatively equal access to the job opportunities.

Numerical balance, however, does not always mean structural equality. The disparity in genders could also exist in leadership roles, wage progression, and promotions (Khan and Jafree, 2019). Subsequent studies ought to be conducted to determine whether the concept of gender parity is sufficient in areas like wage equity and managerial involvement other than just representation. The association between gender-balanced workforces and enhanced team dynamics and the service outcomes is frequent, but number equality may not eliminate structural barriers.

Moreover, the gender relations with family duties play a role in the work-life balance experiences. Within the sociocultural setting, where the role of family caregiving could have a disproportionate impact on the female population, there is no removal of the possibility of differential exposure to stresses by equal involvement in the workplace (Greenhaus and Beutell, 1985). Demographic parity should therefore not be viewed in isolation, but in a wider context of structures.

**Professional Development and Educational Attainment.**

The results reveal that a significant proportion of respondents are in diploma or professional-level education group with a comparatively low amount in the other higher academic groups. The trend indicates technical orientation of para-medical positions, which have always focused on practical skills as opposed to specialization at a higher academic level. Nevertheless, the lack of postgraduate representation can be a sign of the lack of professional developmental avenues.

Career mobility, the access to leadership, and the income potential are closely related to the educational attainment (Maslach and Leiter, 2016). Professionals might have to face career plateau effects when there is limited opportunity of advanced training which as well might lead to reduced job satisfaction and motivation. The spending on high-level certification and further professional training is essential in the formation of healthcare systems, as there is a need to increase the quality of services and keep the staff (Ahmed et al., 2021).

In addition, it is also believed that the higher the education level, the better is the ability to cope and psychological strength (Luthans et al., 2007). Within the wider scope of occupational stress literature, education level can act as a safeguard against burnout. This

ISSN Online: 3007-3154
ISSN Print: 3007-3146



reflected in the low levels of higher academic groups contained in the present workforce showing the need to intervene with policy.

**Work Experience and Stage of Career Distribution.**

The number of participants in the early-to-mid experience groups indicates that the workforce is made up of many people at formative or consolidation phases of their careers. As much as this might be the dynamic recruitment trends, it could also be an indicator that there are difficulties in retaining long-term professionals. Experienced staffs should be retained so that service quality and continuity of the institutions is maintained (Buchan and Aiken, 2008).

It is postulated by the career stage theory that employees at the beginning of their careers find it difficult to balance their roles, whereas those in the middle-career face the challenge of being more responsible and feeling stagnation (Leiter and Maslach, 2009). The observed demographic concentration in this study would mean that the occupational stress studies conducted in para-medical personnel would have involved the use of career stage as a moderating variable.

The low percentage of highly experienced employees could also indicate institutional constraints to vertical mobility. Career advancement models should put in place structured career advancement structures that will promote long term commitment of the institution.

**Compensation System and Economic Viability.**

The findings of the salary distribution show that most of the participants are concentrated in lower to mid-range salary ranges and few in the highest earning bracket. This is because compensation is generally considered one of the key factors of job satisfaction, commitment, and retention in an organization (Schaufeli et al., 2009). The moderate levels of clustering in salary could reflect limited upward financial mobility in para-medical positions.

Poor compensation systems are also prone to instability and migration in the workforce in developing economies (Ahmed et al., 2021). Salary is not the only indicator of the job satisfaction, but it is an important indicator of economic well-being and career motivation. The current results indicate that the compensation reform efforts can improve the retention and morale of the workforce.

Moreover, family life interacts with pay in the development of exposure to financial stress. Since over fifty percent of the participants testify to marriage and responsibility to the children, with the average incomes, economic pressure might increase.

**Work life Interface and Family Characteristics.**

These results show that most of the respondents are married. Healthcare jobs are shift work, emotional work and time cognizant making it more prone to work family conflict (Greenhaus and Beutell, 1985). Psychological strain may also be brought about by family demands especially where there are no well-established organizational support mechanisms.

The study of work-family interface proves that the family-friendly policies at work lower burnout rates and raise engagement levels (Maslach and Leiter, 2016). The demographic features in this case study highlight the significance of the flexibility of the institution, support of childcare and balanced scheduling patterns.

The family traits are especially applicable in collectivist cultural backgrounds where family demands have high social pressures. Retention and morale can be enhanced by

ISSN Online: 3007-3154
ISSN Print: 3007-3146



institutions that actively deal with work-life balance issues.

On the whole, the demographic results show a workforce with a sustainability potential, technical skills, gender inclusion, average salary, and high family involvement. As much as these attributes can be described as strengths in the para-medical sector, it also brings out issues that need structural improvement.

The demographic profile that has been developed in this paper will give a significant background information in future studies concerning occupational stress, burnout, and psychological capital in para-medical staff. The demographic variables cannot be considered as control variables but rather as contextual factors with meaning that influence occupational outcomes.

**Limitations of the Study**

Regardless of the merits of the current study, such as a large sample size (N = 2043) and a thorough demographic coverage, it is important to note various limitations to the interpretation of the results.

First, the study was conducted using cross-sectional descriptive research design that restricts the possibility of paying attention to the time trends or changes of workforce over time. The demographic profile that is taken is the current state of the para-medical workforce. A longitudinal study would give a stronger understanding of the stability of workforce, retention and career advancement completions.

Second, the research used categorical demographic coding, as opposed to continuous measures of the variables age, salary, and experience. Although categorical grouping can be used in descriptive profiling, it limits the accuracy and makes more sophisticated statistical analysis impossible. As an illustration, precise age groups or salary bands would enable a more detailed workforce prediction and financial evaluation.

Third, the study did not break down the findings by province, urban rural distribution or institutions of public or private institution even though the sample size was large. The nature of workforce can be different in geographic and institutional realities in Pakistan. The further researches will need to include stratified sampling methods so that they can be more representative of the healthcare areas.

Fourth, the authors only conducted descriptive statistics. Although this was in line with the main aim of workforce profiling, the inferential analyses like chi-square or regression models or structural modelling may be used to further investigate the relationship between demographic variables. An example of this is the analysis of relations between gender and salary bracket or experience and educational level which would offer more insight into the structural patterns.

Fifth, the qualitative aspects of workforce experience, including the perceived career opportunity, job satisfaction, or organizational support, were not studied. Demographic profiling would present a background but workforce dynamics is influenced by structural and psychosocial variables. It would enhance interpretation by incorporating qualitative methods in the research in the future.

Lastly, the research defined an occupational stress, burnout, or psychological capital in the current paper, most of the occupational stress, burnout, or psychological capital was not directly measured in the study. Consequently, any implications of well-being based on this paper are hypothetical as opposed to being empirically tested. Research efforts in the future need to consider the demographic variables when predicting occupational outcomes.

Regardless of these shortcomings, the research offers one of the most detailed demographic maps of para-medical staffs in Pakistan and creates a solid empirical basis

ISSN Online: 3007-3154
ISSN Print: 3007-3146



Vol. 4 No. 2 (February) (2026)

on future research and policy-making.

**Implications**

The research findings have important implications on the health workforce planning, institutional policy shift reform and future research development in Pakistan. The fact that the age structure is mostly made up of young-to-mid career age indicates that the healthcare institutions are now placed with a sustainable workforce base. Nevertheless, the concept of sustainability presupposes the active strategic planning to guarantee the long-term retention and professional development. Mid-career professionals should avoid stagnation and turnover by providing career progression pathways, mentorship programs, and advanced training programs to institutions.

The overrepresentation of personnel in the diploma level education shows that there is an urgent need to increase the postgraduate and advanced certification programs in the allied health professions. By creating explicit academic progression ladders, clinical competence would be improved, as well as, professional identity and motivation. Regulatory agencies and policymakers are required to work with universities and technical institutes in coming up with specialized advanced diplomas and masters level programs in allied health.

Patterns of salary distribution show moderate compensation with a small upward mobility. Reform of compensation is crucial in order to improve workforce stability and decrease the migration patterns. Transparent pay scales, performance incremental scales, and premeditated promotion systems might enhance organizational commitment. Due to the economic burden of the family role, the economic stability is strongly interconnected with the occupational well-being and retention

The sample composition of both genders can be considered to be a good indicator of positive inclusion trends but institutional policies should be adapted so that gender equity in the leadership sphere and wage equality can be achieved. To avoid structural inequality, gender-sensitive human resource systems are to be adopted.

Demographic data on family indicate that workplace policies that are family supportive are vital. Healthcare facilities should entertain the idea of adopting a flexible work schedule system, parental leave, and childcare systems. The occupational stress and burnout have been significantly linked to work-family conflict (Greenhaus and Beutell, 1985; Maslach and Leiter, 2016). It could be beneficial to impact both the efficiency of the services and the well-being of employees, focusing on the family-related pressures.

In terms of research, the demographical profile developed in this study constitutes a critical point of departure in incorporating the structural variables in the occupational stress and psychological capital theories. The predictive or moderating variables that should be included in future empirical analysis include demographic factors like age, experience, education and salary. It is suggested that longitudinal workforce tracking systems are used in order to track the retention patterns, migration patterns, and career development patterns.

At the national level, the development of a centralized database of allied health workers would be of great advantage in terms of policy formulation based on evidence. There is a possibility of more accurate prediction of workforce requirements, the trend of retirement, and demands in the educational pipeline through systematic demographic monitoring. This infrastructure is necessary in a developing healthcare system like that of Pakistan so as to have sustained service provision.

In general, the current research offers baseline information that can be used in strategic workforce changes to enhance the para-medical sector and enhance resilience of the

ISSN Online: 3007-3154
ISSN Print: 3007-3146



healthcare system.

**References**

Ahmed, R., Shuja, K. H., & Zahid, S. (2021). Healthcare workforce challenges in Pakistan: Human resource planning and policy implications. Journal of Health Policy and Management, 15(2), 45–58.

Aiken, L. H., Clarke, S. P., Sloane, D. M., Sochalski, J., & Silber, J. H. (2002). Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction. Journal of the American Medical Association, 288(16), 1987–1993. https://doi.org/10.1001/jama.288.16.1987

Buchan, J., & Aiken, L. (2008). Solving nursing shortages: A common priority. Journal of Clinical Nursing, 17(24), 3262–3268. https://doi.org/10.1111/j.1365-2702.2008.02636.x

Greenhaus, J. H., & Beutell, N. J. (1985). Sources of conflict between work and family roles. Academy of Management Review, 10(1), 76–88. https://doi.org/10.5465/amr.1985.4277352

Halbesleben, J. R. B. (2010). A meta-analysis of work engagement: Relationships with burnout, demands, resources, and consequences. Work & Stress, 24(3), 207–224. https://doi.org/10.1080/02678373.2010.515839

Khan, M., & Jafree, S. R. (2019). Gender dynamics in Pakistan's healthcare workforce. International Journal of Human Rights in Healthcare, 12(3), 185–197. https://doi.org/10.1108/IJHRH-08-2018-0045

Leiter, M. P., & Maslach, C. (2009). Nurse turnover: The mediating role of burnout. Journal of Nursing Management, 17(3), 331–339. https://doi.org/10.1111/j.1365-2834.2009.01004.x

Luthans, F., Avolio, B. J., Avey, J. B., & Norman, S. M. (2007). Positive psychological capital: Measurement and relationship with performance and satisfaction. Personnel Psychology, 60(3), 541–572. https://doi.org/10.1111/j.1744-6570.2007.00083.x

Luthans, F., Youssef-Morgan, C. M., & Avolio, B. J. (2015). Psychological capital and beyond. Oxford University Press.

Maslach, C. (2003). Job burnout: New directions in research and intervention. Current Directions in Psychological Science, 12(5), 189–192. https://doi.org/10.1111/1467-8721.01258

Maslach, C., & Leiter, M. P. (2016). Burnout. John Wiley & Sons.

Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. Annual Review of Psychology, 52, 397–422. https://doi.org/10.1146/annurev.psych.52.1.397

Schaufeli, W. B., Bakker, A. B., & Van Rhenen, W. (2009). How changes in job demands and resources predict burnout and engagement. Journal of Organizational Behavior, 30(7), 893–917. https://doi.org/10.1002/job.595

Schaufeli, W. B., Leiter, M. P., & Maslach, C. (2009). Burnout: 35 years of research and practice. Career Development International, 14(3), 204–220. https://doi.org/10.1108/13620430910966406

Shanafelt, T. D., & Noseworthy, J. H. (2017). Executive leadership and physician well-being. Mayo Clinic Proceedings, 92(1), 129–146. https://doi.org/10.1016/j.mayocp.2016.10.004

World Health Organization. (2020). State of the world's nursing 2020: Investing in education, jobs and leadership. WHO Press.

World Health Organization. (2022). Global health workforce statistics 2022. WHO Press.

ISSN Online: 3007-3154
ISSN Print: 3007-3146



Vol. 4 No. 2 (February) (2026)

World Health Organization. (2023). Global strategy on human resources for health: Workforce 2030 update. WHO Press.