

Natural Hazard Vulnerability and Risk Assessment: The Case of the China-Pakistan Economic Corridor (CPEC)

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Abstract

The coverage area of the China-Pakistan Economic Corridor (CPEC) in Pakistan, including its critical functional zones within which major projects are located, is prone to different types of natural hazards and disasters. Since 2015, efforts have been made to operationalize CPEC without institutionalizing and establishing a comprehensive natural hazard risk assessment mechanism within the China-Pakistan collaborative framework. It goes against the grain of robust, resilient, and sustainable long-term development of CPEC. This study critically argues for the need to set up a multi-hazard risk assessment and disaster response mechanism as part of the institutional framework of CPEC, responsible for identifying, preparing, and planning against primary, secondary, and tertiary risks in accordance with the varied hazard vulnerability prevalence in varying geospatial and functional zones within the coverage area of CPEC. Overall, the study identifies and discusses the risk-prone nature of the current development of CPEC and proposes a real-time, technologically enabled, natural hazard risk assessment of CPEC projects spread over varying geospatial and functional zones in an institutional framework characterized by the uninterrupted collaboration and concentration of experts and resources from China and Pakistan.

Keywords: CPEC; Multi-hazard Vulnerability; Institutionalized Risk Assessment; Disaster Risk Reduction and Management; Collaborative Mechanism.

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1. INTRODUCTION

Pakistan is vulnerable to various natural hazards like floods, avalanches, landslides, heat waves, wildfires, and cyclones. Climate change caused by man-made activities largely contributes to the outbreak of these natural hazards. The annual presage estimated cost of environmental degradation and natural resource damages in Pakistan is about 365 billion

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rupees, one billion rupees per day, or six percent of GDP (World Bank, 2023).

Analyzing the data for the period 2000-2019, German Watch's Global Climate Risk Index 2021 Report ranked Pakistan as the 8th most vulnerable country to climate change, having experienced 173 climate-related events and the loss of 0.52 percent of its GDP to climate events during the period studied (Eckstein *et al.*, 2021). According to the World Bank, Pakistan has around a 3 percent annual median probability of severe meteorological drought, which was projected to increase under all emission pathways and could increase dramatically under higher emission pathways. United Nations Disaster Risk Reduction Office (UNDRR) puts Pakistan's average annual losses to floods at about USD 1 billion (Pakistan, World Bank's Climate Change Knowledge Portal, 2022).

This multi-hazard vulnerability of the national territory can be translated directly or indirectly into multiple risks posed to the ongoing development of CPEC including its functional zones, routes, node cities, and significant projects. Pakistan is prone to multiple natural hazards, which makes strategic megaprojects, i.e., CPEC, highly susceptible. Natural disasters can significantly affect the infrastructure and leading projects of CPEC, resulting in substantial economic and human loss. Because of the prevalence of natural hazards in Pakistan, weak institutional disaster management framework, and implicit economic repercussions of natural hazards on CPEC, the vulnerability and risk assessment of natural hazards of CPEC are crucial. Given this situation, this study consists of a critical discussion of the risk posed to the ongoing development of CPEC by the vulnerability of projects to multiple natural hazards like floods, avalanches, GLOFs, landslides, earthquakes, and heatwaves. The vulnerability can compromise the medium-to-long-term integrity and health of CPEC infrastructure, investment, and human capital, possibly negatively affecting societal development, economic growth, and quality of life of people and communities involved. The study's main objectives include extensive risk assessment of CPEC projects and infrastructures vulnerable to multiple natural hazards in disaster-prone regions of Pakistan. The study further explores the avenues of collaborative institutional framework between Pakistan and China for climate resilience of CPEC and disaster risk reduction in vulnerable regions of the country. The study consists of five sections. The second section critically outlines the scope of mapping the vulnerability of CPEC to natural hazards in terms of its coverage areas and functional zones, as well as identifies critical factors for the absence of a proper mechanism for assessment of the risk posed by natural hazards to CPEC

projects. The third section conducts a multi-hazard risk assessment of CPEC projects and routes. The assessment is more in the nature of a critical identification of the risks posed by different types of natural hazards to crucial routes, node cities, and projects of CPEC.

The assessment is initial because the scope and magnitude of a comprehensive risk assessment will naturally go beyond any single study and will involve a bilateral, multi-sectoral, multi-institutional undertaking. The fourth section briefly discusses the salient aspects of an evolving joint mechanism for natural hazard risk assessment and disaster risk reduction and management mechanism between China and Pakistan within the overall collaborative institutional framework of CPEC. The fifth section considers the key determinants of China-Pakistan DRR collaboration before summing up and concluding the study. The primary approach adopted by the study has been the critical qualitative analysis of a broad range of relevant literature on the subject. The analysis has been primarily qualitative since it has dealt critically with texts; it has only been secondarily quantitative as it has analyzed secondary data and figures relevant to the study. This body of literature has consisted of research articles in impact-factor journals, institutional reports and working papers of the departments and organizations of the Government of Pakistan, reports of international organizations, think tanks, and policy papers, reports and presentations of significant seminars and workshops on natural hazard risk assessment of CPEC, newspaper and magazine articles, and relevant online resources on the subject. The findings or recommendations of the study are provisional and time-bound, subject to revision by further studies, changes in the nature of the challenges, and advancement in the state of knowledge in the field.

2. MAPPING NATURAL HAZARD VULNERABILITY OF CPEC

In Pakistan, cities, rural communities, and different levels of projects, including big growth infrastructures like dams and highways, may be increasingly at risk. This risk also extends to the China-Pakistan Economic Corridor (CPEC) and its constituent projects because of CPEC's spatial layout across the length and breadth of Pakistani territory. Projects under the bilateral strategic development program fall in energy, infrastructure, Gwadar development complex, regional industrial development or special economic zones, and social and economic sector development projects. The coverage of CPEC consists of the whole of Pakistan together with the cities of Gilgit, Peshawar, Dera Ismail Khan, Islamabad, Lahore, Multan, Quetta, Sukkur,

Hyderabad, Karachi, and Gwadar serving as key node cities; these node cities are connected through three "broad axes" linking "Lahore and Peshawar, Sukkur and Quetta, and Karachi and Gwadar," further crisscrossed by several rail and highway lines from Islamabad to Karachi and Gwadar (Government of the People's Republic of China and Government of Islamic Republic of Pakistan, 2017)." This geospatial, social, economic, cultural, and developmental diversity of CPEC makes the task of natural hazard vulnerability risk assessment urgent and highly formidable. The fact that Pakistan has hugely varying topography, ecosystems, and climate zones makes the task even more daunting (The World Bank and The Asian Development Bank, 2021). The all-Pakistan coverage of CPEC means that different spatial zones, node cities, developmental axes, transport passages, and regional economic development acceleration projects may be exposed to geophysical, hydrological, meteorological, climatological, and biological events during its operationalization and functional duration (NDMA, 2019). The risk assessment and response planning for safe and resilient CPEC development would, therefore, need to be multi-hazard in orientation with levels of primary, secondary, and tertiary risks following the varied hazard vulnerability prevalence or dominance in varying geospatial and functional zones of the development of CPEC projects.

The study identifies four phases of the disaster cycle - mitigation and preparedness (which occur beforehand), response (during and after), and recovery (short and long-term actions following the disaster) (Von Meding *et al.*, 2011). Thus, for successful, durable, sustainable, and high-quality development of CPEC, natural hazard risk to CPEC projects should be undertaken comprehensively and scientifically with the concentration and collaboration of China and Pakistan's most advanced technological and human resources. Since its inception in 2015, CPEC has been developed without a proper risk assessment and management system. However, it does not mean the need for China-Pakistan natural hazard and disaster risk prevention and management collaboration was not felt immediately after the CPEC development's operationalization (Associated Press of Pakistan, 2018). When seeking solutions to complex problems, collaboration is essential. This is the case for natural disasters, where the impacts are so massive that no entity or organization can solve each issue and help every person in need of aid. Therefore, collaboration is integral to successful disaster relief (Kaltenbrunner and Renzl, 2019).

The need for rapid execution of critical infrastructure and energy projects after a gap of more than a decade in which no major infrastructure development project was undertaken, the difficult security situation in the early to mid-2010s, low rates of foreign direct investments during the years preceding the operationalization of CPEC, and the opportunity to benefit from the enhanced global standing of China due to the massive dividends of its sustained peaceful development may have compelled the policy planners and architects of CPEC to initiate the strategic program with little natural hazard risk assessment.

Phase II and later phases of the bilateral development program will necessitate a comprehensive framework for dealing with natural hazards and disasters as the effects of man-made climate change intensify. An elaborate China-Pakistan natural hazard and disaster risk assessment and management system focused on CPEC. It is equipped with new generation stereoscopic monitoring technology to provide a scientific and viable coping and prevention strategy in the face of extreme natural events (Daily Times, 2022). This is especially important for CPEC projects located in Gilgit-Baltistan (GB) since many areas covered by infrastructure projects in GB consist of rugged mountainous terrain prone to natural hazards like earthquakes, seasonal or flash floods, landslide, debris flow, and glacial melting (ECOSF, 2017). Most CPEC projects lie in moderate to very high seismic hazard zones with considerable risk overall. Among several other risks, such as political, economic, and security, natural hazard risk can also negatively impact the stages of transformation and advancement of CPEC from transport infrastructure to trade and logistics development to a full-fledged economic corridor development (Ali, 2018).

3. MULTI-HAZARD RISK ASSESSMENT OF CPEC ROUTES AND PROJECTS

Taking the whole coverage of CPEC in Pakistan into account with the three above-mentioned horizontal axes and the three major arterial eastern, central, and western transport routes of CPEC together with the GB as the entry region of CPEC from China, three major regions – northern, central, and southern - regarding natural hazard risk vulnerability can be identified in so far as CPEC is concerned (Ali, 2018). Pakistan faces the current phenomenon of Glacial Lake Outburst Floods (GLOF). The GLOF-II project initiated by UNDP aims to highlight this problem and offers risk management strategies while helping to improve community preparedness and disaster response. The

northern region localized in GB is exposed to the risks of seismic, glacial lake outburst flood, and earthquake; the central region comprises central and western routes across central and southern Punjab, upper and lower KP, and upper Sindh, and the southern region comprising eastern, central, and western CPEC routes across lower Sindh, central and southern Balochistan are typically prone to risks of seasonal floods and flash floods (UNDP, 2020). It is to be noted that the entry point of CPEC from China into Pakistan and the termination point at Gwadar, along with the surrounding region, are of critical importance because there are no alternatives at these points in terms of route or plan diversion.

Since one region is prone to seismic and glacial risks and the other region is prone to risks like flash floods, droughts, heatwaves, and dust storms, what this essentially means is that CPEC projects and routes at these two points need to be safeguarded, especially against robust bilateral natural hazard and disaster risk assessment, prevention, reduction, and management mechanism must be highlighted (UNDP, 2020).

Considering that seismicity tends to be higher in northern and western parts of the country, transport, dam, and special economic zones will need to be built at safe sites and safeguarded against possible seismic events and any secondary events through robust, technologically advanced accurate early warning systems (National Disaster Response Plan, 2019). The China–Pakistan Economic Corridor (CPEC), a key hub for trade, is susceptible to glacial lake outburst floods, but the distributions and types of glacial lakes in the CPEC area are not well documented (Li *et al.*, 2020). CPEC route traverses next to some of the biggest glaciers outside Polar regions, making it vulnerable to the hazards associated with glaciers, and together with the "combined impact of geohazards," the "Karakoram Highway (KKH), along the CPEC route has been frequently subjected to damages, human loss and disruption by rock fall, sliding of debris and rock, debris flow, mudflow, and flash floods (Khan, 2018)." It has been found that the comprehensive characterization and inventorying of landslides along the entire KKH due to limitations related to monitoring datasets and environmental conditions has been hampering the "process of risk assessment and development of disaster prevention and mitigation strategy for the region (Su *et al.*, 2021)." The fundamental causes of landslides in the region consist of "high-elevation terrain, steep slopes, high topographic relief, tectonic activity, and erosion." Hence, the international workshop on "CPEC Natural Hazards Risk Assessment and Mitigation and Silk Roads Disaster Risk Reduction" held in Islamabad concluded that there is a need for collaboration

between Chinese and Pakistani Disaster Risk Management and Infrastructure Specialists to formulate a mechanism and provide disaster risk reduction strategy for the infrastructure projects under the China Pakistan Economic Corridor (ECOSF, 2017).

What is particularly worrisome is that four (Gilgit, Karachi, Peshawar, and Quetta) out of the eleven cities identified as major nodes of CPEC in the Long-Term Plan of CPEC have been identified by the National Disaster Response Plan of 2019 as the most vulnerable districts in terms of earthquakes. Gwadar is also located in the region along Pakistan's coastal belt, which is prone to high seismic hazards. Similarly, six (Dera Ismail Khan, Gilgit, Gwadar, Karachi, Peshawar, and Sukkur) out of the eleven node cities of CPEC are listed by Pakistan's National Disaster Management Authority (NDMA) as the most vulnerable districts in terms of floods and flash floods. Gilgit is most vulnerable to avalanches as well. Moreover, Gwadar, Karachi, and Peshawar are extremely vulnerable to more than one category of natural hazards.

Similarly, at least one major city, Rawalpindi, the twin city of Islamabad, is also listed as the most vulnerable city. Islamabad is also one of the significant nodal centers of CPEC development. The proximity of a central CPEC node right next to a highly vulnerable city in terms of natural hazards can affect the long-term progress of CPEC projects based in the capital city, which is, in effect, the nerve center and the central clearing house for all CPEC planning and development. Significant portions of the central route of CPEC also pass through the regions of Pakistan identified as high-risk flood areas. At least two node cities of CPEC, namely Gwadar and Karachi, are at a high and medium drought risk. Gwadar, Karachi, and Thatta are also most vulnerable to cyclones and tsunamis (National Disaster Response Plan, 2019). It must be mentioned that four major wind power projects and two additionally planned wind power projects under CPEC are in Thatta. Bahawalpur, the site of the massive 1000 MW solar power project under CPEC, is identified as the most vulnerable to droughts.

The 884 MW Suki Kinari hydropower project under CPEC is in Mansehra, which has been identified as one of the districts most vulnerable to floods and flash floods (CPEC Secretariat, 2021). Moreover, the mega energy projects of CPEC are coal-based power plants, i.e., coal power plants in Sahiwal, Hub, Karachi, and Thar. Coal-based power plants have severe environmental implications, releasing tons of greenhouse gases (GHG) into the atmosphere. These GHGs, in the long term, will cause climate-induced natural

disasters in Pakistan. These risks further increase CPEC infrastructure's vulnerability and jeopardize the megaproject's long-term viability.

In contrast, renewable energy projects emit less carbon emissions, improving environmental quality and sustainable development. The potential of renewable energy has been explored in ASEAN countries and can be implemented in Pakistan (Wu *et al.*, 2021). A study (Zhang *et al.*, 2020) investigated the consumption and energy efficiency pattern concerning economic growth in developing countries. The study's findings revealed that developing economies have high energy intensity and low energy efficiency. Pakistan follows the same scenario with severe line losses and poor transmission channels. In addition to natural hazards vulnerability assessment, having the agenda of sustainable development, environmental conservation, and significant investments in renewable energy projects can enhance the disaster resilience of CPEC.

Incidentally, Karachi and Lahore are also identified as highly vulnerable to industrial hazards, which a natural hazard event can cause. It is easy to imagine the magnitude of the impact of a potential major natural hazard event in these cities either separately or in two or more of these districts. Urban droughts are becoming a stark possibility for big cities suffering water stress due to the impact of urban anthropogenic carbon emissions and accelerated global warming on the hydrological cycle. Also, in Asian metropolises, “choked water bodies and urban drainage systems increase the vulnerability to floods” as well as heightening the “frequency and intensity of water-related disasters like floods and droughts under climate change impacts, hindering development prospects” due to the spatial concentration of “water demand of millions into a small area.” Key CPEC node cities like Gwadar, Karachi, Lahore, Peshawar, and Quetta are vulnerable to the urban drought phenomenon (Ray and Shaw, 2019).

Along with a range of infrastructure projects, two critical Phase II projects aiming at industrial development are in these regions: Moqpondass Special Economic Zone (SEZ) in GB and Gwadar Free Zone (CPEC Secretariat, 2021). These two projects are critical to the transformation of CPEC as envisaged in the joint Long-Term Plan for CPEC (2017-2030). Gwadar represents a comprehensive port city development complex consisting of multiple projects across different domains of urban, business, educational, health, industrial, marine, trade, and transport development, and in this sense, it serves as the microcosm of CPEC itself. Natural hazards can also thwart the transition from one stage of development to another. For a country like

Pakistan, which has been locked into the stages of semi-industrialization for some decades now, natural vulnerability poses a greater risk to development gains than newly industrialized countries with the resources and the know-how to minimize the losses incurred due to natural hazard events and disasters. This finding is backed by studies that have explained how developing countries like Pakistan are less responsible for GHG emissions, a significant factor behind recent climate changes, but the adverse impacts are higher on developing nations. Natural hazards like the recent forest fires in Balochistan and the extraordinary nationwide heat wave where the maximum temperature was recorded to be 51 degrees centigrade in March are foreboding natural hazards that have the potential to disrupt the development of not only CPEC projects but also any other community, rural, or urban development initiatives (Youmatter, 2020).

4. EVOLVING PAKISTAN-CHINA DISASTER RISK REDUCTION (DRR) MECHANISM

In the wake of recent wildfires that raged across the Sulaiman Mountains in Pakistan, China, and Pakistan have agreed to establish a joint monitoring system for forest fire early warning, mitigation, and response utilizing modern technologies like satellite imaging and information and resource sharing in the event of a future emergency (CPEC Secretariat, 2022). An earlier understanding between the two countries regarding disaster management collaboration was already reached in February 2022 (Siddiqi, 2022).

Such collaboration would be based on a detailed hazard' analysis for the comprehensive monitoring and evaluation system based on many distinct but related analyses, namely, seismic hazard vulnerability analysis, landslide hazard analysis, forestation and reforestation analysis, snow and debris hazard analysis, environmental hazard analysis, land erosion analysis, and impact analysis of climate change on glaciers. The types of data that could be required would consist of data on environmental degradation, inland and cross-border traffic volume, capacity, and flow, geotechnical and geological changes like landslides and avalanches, area-specific satellite imaging, meteorological conditions including precipitation rates, water level including inflow and outflow of rivers and reservoirs (Afzal and Naseem, 2018). What is also required is to involve the urban and rural communities and small, medium, and large enterprises operating near and adjacent to crucial CPEC projects in natural hazard risk reduction and mitigation activities. Social, business, and

government players should create an early warning system of natural hazards and risks peculiar to any given area or region where CPEC projects are based. Moreover, education and innovation can contribute significantly to climate change mitigation and developing the DRR framework for CPEC. The role of academia and researchers in shifting the trend towards renewable energy consumption and better environmental practices in OECD countries has been acknowledged (Li *et al.*, 2023). Hence, there is enormous potential for researchers from Pakistan and China to contribute to developing a collaborative DRR framework to make CPEC climate resilient.

It is of the essence to develop a natural hazard vulnerability index for specific regions or areas of CPEC coverage. It is also essential to recognize that CPEC is a continuum and requires uninterrupted operations across the continuum to produce optimal benefits for national, regional, and local development. Without such a comprehensive risk index, it can be said with some degree of certitude extrapolating from the existing data that no significant area of CPEC operationalization is entirely free from natural hazard risks. A CPEC-specific natural hazard risk index would determine the level of risk to which CPEC as a whole and individual CPEC projects are exposed. As part of the formulation of the proposed index, there is a further need to disaggregate district-wise multi-hazard vulnerability and risk assessment for all districts in which CPEC projects are located or through which CPEC transport infrastructure projects pass, in the same manner in which Pakistan's National Disaster Management Authority (NDMA) has prepared such assessments for a few districts of Pakistan, with the only difference that CPEC natural hazard vulnerability and risk assessment should be tailored to the specific needs of planning, development, execution, and operations of CPEC projects (NDMA, 2021). The great work being done by NDMA should also involve increasing sensitivity to CPEC development, including increasing the developmental sophistication of its future phases.

This risk assessment should also include multiple humans, social, economic, geographical, cultural, community, and industrial development risks. The risk assessment effort should also be categorized according to the five major domains of CPEC development. How the devastation caused by a natural hazard event is further exacerbated by non-natural factors like explosive population growth, urban sprawl, haphazard industrialization, rural-urban migration, high reliance on agricultural dependence, poverty traps in hazard-prone regions, poor disaster risk reduction institutional capacity, unregulated land use planning should also be studied for each of the significant node cities

of CPEC as well as other districts home to key CPEC projects (Yu *et al.*, 2018). The inestimable value of predictive forecasting and scenario-based planning should be fully leveraged for natural hazard risk reduction in CPEC nodes and the surrounding regions. It is essential to study and analyze the natural hazard vulnerability of the Chinese section of CPEC before it enters Pakistan and then collate the data and information thus gathered with the natural hazard vulnerability of the Pakistani section of CPEC in order to set up a comprehensive early warning monitoring and evaluation system to contain losses and setbacks to CPEC investments, human resources, natural resources, and lives and property of communities inhabiting the regions of CPEC coverage.

The natural hazard vulnerability of CPEC projects and the areas and regions of their location should be conceived in the context of the totality of the natural and social environments of which they are a part. It should be mainly remembered that these environments are different in spatial and social terms, marked by unequal distribution of opportunities and hazards, that both the opportunities for work, progress, and development and hazards of different types are conditioned by socioeconomic processes that determine status and access to resources, that this access remains unequal at best, that class, gender, ethnicity, age group, physical and mental health as well as immigration status play an essential part in determining access to resources. Lastly, social systems, political systems, and economic systems at local, national, and international levels affect the ability of people, communities, and even authorities to deal with the impact of natural hazards (Wisner *et al.*, 2015). The ability of the country to deal with natural hazards and the consequent losses will depend upon the degree of preparedness and the level of socioeconomic development of the countries in question (Yu *et al.*, 2018). Concerning natural hazard vulnerability related to CPEC coverage, such a nuanced approach is essential to meet the seven targets and four priorities of the UN Sendai Framework for Disaster Risk Reduction 2015-2030 (Center, 2015).

5. CRITICAL DETERMINANTS OF CHINA-PAKISTAN DRR COLLABORATION

In the context of China-Pakistan collaboration on natural hazard monitoring, evaluation, and mitigation, at least four challenges can be identified, that is, "lack of common geological and meteorological background on natural hazards" with lack of information sharing and coordination, presentation by natural hazards of "new characteristics in terms of formation,

triggering criteria and mobility," lack of detailed "hazard and risk assessments" from the starting point of CPEC in China and its end point at Gwadar in Pakistan, and the probable difference in China and Pakistan in "design codes, procedure, technologies and practices of hazard assessment and mitigation." These challenges will be reinforced with the four significant modeling constraints in risk assessment: limited availability of data and heterogeneous data reflecting differences in format, scale, mapping parameters, and terminology use (Yu *et al.*, 2018). Here, it is necessary to mention that it is essential to collaborate regarding information sharing with other countries in the region, given the likelihood that natural hazards may have cross-border impact, too. At least four strategies can be identified for dealing with natural hazard risk reduction along CPEC, namely, "collection of strategic information about past disasters in a central archive" set up through China-Pakistan collaboration, availability of "long-term data sharing by local authorities and institutes" in CPEC node cities, on project sites and surrounding regions, such as the China-Pakistan Joint Research Center on Earth Sciences (CPJRC), conducting "investigations on natural hazards and risk assessments (both ground- and remote-based and shared protocols and guidelines in mitigation practices." A two-pronged effort consisting of "aggregation, homogenization, standardization of existing datasets and implementation of lacking data" would be required on the one hand, and "the development of a new and unique dataset developed according to shared protocols and validated by the existent datasets (Peng *et al.*, 2017)."

What is essential to recognize further is that apart from the technical-scientific challenges of natural hazard risk assessment, natural hazard and disaster risk reduction require an approach sensitive to some other factors. Since the goal of natural hazard risk assessment is fundamentally to enhance the resilience of CPEC as a whole, including its constituent projects, node cities, passage regions, and the five functional zones identified in the Long-Term Plan, it is worthwhile to note that resilience is seen and understood differently for different stakeholders and that this difference depends upon the "type of hazard" such as the category of natural hazard, the scale of hazard, that is, cross-border, local, city-based, project-based, community-based, "the type of society and its developmental stage," that is, whether it is an underdeveloped, developing or developed society, "time frame," and the cognitive and disciplinary standpoint of stakeholders (Yokomatsu and Hochrainer-Stigler, 2020).

6. LIMITATIONS AND WAY FORWARD

The study mainly investigated secondary data and conducted a qualitative risk assessment of CPEC. Community-based risk assessment, questionnaires, interviews, and focus group discussions are separate from the study due to the extensive study area and reasonable financial and time constraints. Future research studies in this area should focus on quantitative risk assessment of CPEC in Pakistan. The use of specific GIS tools and remote sensing techniques for natural hazard vulnerability mapping should be conducted for quantified risk evaluation. Future studies should focus more on area and natural hazard-specific risk assessment of critical CPEC routes and projects. Community-based disaster management studies at a smaller scale can be a way forward for better understanding and management of natural disasters in Pakistan.

7. CONCLUSION

Because of the vulnerability of the development and operationalization of CPEC to multiple natural hazards, a bilateral multi-dimensional, multi-sectoral, and staggered stage-wise approach to natural hazard risk assessment that takes into account regional, project, developmental, procedural and technique, operational, spatiotemporal, and natural hazard typological diversity of CPEC development will be able to provide assurances and guarantees of robust disaster risk reduction and mitigation in the event of single or combined natural hazard outbreak. For this approach to succeed, there is a need to promote sustainable public-private partnerships in natural hazard risk assessment exercises. Community and business perspectives must be aligned with the requirements of resilience disaster risk reduction in CPEC development. The possibility of non-natural risks like political and security risks aggravating natural hazard risks should not be underestimated. The effect of political polarization and terrorism on reduction and mitigation efforts should be understood clearly by various stakeholders.

Provincial coordination efforts are significant in modeling end-to-end natural hazard risk assessment for the entire CPEC. Regular information and resource sharing between China and Pakistan and within Pakistan are equally essential to ensure the successful operationalization of the prospective bilateral natural hazard monitoring and evaluation mechanism. Periodic reviews and updates, triangulation of data for different types of natural hazards, and building

scenarios of natural hazard events along any given node of CPEC can further consolidate the bilateral risk assessment efforts.

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Evaluating the Effect of Tariff and Non-tariff Barriers on Exports in the Pre and Post China-Pak Free Trade Agreement (FTA) Period

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Abstract

Low trading costs, more significant consumer markets, and favourable economic ties between China and Pakistan provide a strong rationale for bilateral trade. Both countries have signed several bilateral trade agreements to boost mutual trade since 1963. The agreement that marked the beginning of a new era of cooperation between two trading partners and paved the way for free trade agreements was the Early Harvest Program (EHP), implemented in 2006. The first China-Pakistan Free Trade Agreement (CPFTA) was signed in November 2006 and became operational in 2007. CPFTA aimed to remove tariff and non-tariff barriers, enhance the comparative value of exports, and increase exportable surplus mainly through technical and financial cooperation. The paper critically evaluates the impact of tariff and non-tariff barriers on Pakistan's key exports in the pre- and post-CPFTA period. Further, the study quantifies the impact of non-tariff barriers using quantitative techniques of restrictiveness index, converge ratio, and frequency index with 4-digit H.S. code industry-level data. The analysis reveals that China imposed a relatively high tariff rate on Pakistan's top five exports compared to China's other FTA partner countries. The results about the effect of non-tariff barriers (NTBs) show that exports related to cereals, edible fruits, and textile sectors are highly covered under Sanitary and Phytosanitary (SPS) and technical barriers to trade (TBT) despite FTA. Our findings have substantial implications for sustained trade ties between China and Pakistan.

JEL Classifications: F13

Keywords: China-Pakistan Free Trade Agreement, Trade Deficit, Tariff and Non-tariff Barriers, Coverage Ratio, Frequency Index

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1. INTRODUCTION

China and Pakistan are neighbours and developing economies with large populations. Lower transportation and logistics costs due to shorter

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distances and larger consumer markets justify trade between the two economies. The free flow of goods and services allows the consumers of two countries to consume quality goods at lower prices. To gain from free trade, China and Pakistan have signed several bilateral trade agreements since 1963 (Kamal and Malik, 2017). The agreement that marked the beginning of a new era of cooperation between two trading partners and paved the way for free trade agreements was the Early Harvest Program (EHP), implemented in 2006. The China-Pakistan Free Trade Agreement (CPFTA) was signed in November 2006 and became operational in 2007 to give friendship a chance to strengthen and increase trade volume.

CPFTA potentially removes tariff and non-tariff barriers, enhances the comparative value of exports, and increases exportable surplus mainly through technical and financial cooperation. China provided tremendous market access to Pakistan's products, while the latter reciprocated similarly. As its leading trade partner, Pakistan aimed to increase its export basket to China and reduce its trade deficit, which is constantly widening. Currently, China has 24 FTAs in progress, and 14 out of them have been signed and implemented. Moreover, China signed a trade agreement in services in 2009 with Pakistan. The second round of FTAs was signed in April 2019, providing concession on 313 items.

Among the SAARC countries, China has signed FTA only with Pakistan. However, negotiation of China with Maldives and Sri Lanka is in the process, while the agreement is under consideration with Bangladesh. If the agreement is reached with Bangladesh, then tough competition is likely between Pakistan and Bangladesh as the two countries rely heavily on the textile sector for their exports.

This study mainly conducts pre- and post-FTA trade analysis of Pakistan. The descriptive analysis reveals that even after the FTA, Pakistani products face comparatively higher tariff rates in the Chinese market than ASEAN and other FTA partners of China. Though trade volume has increased after the FTA, a significant part of this trade consisted of imports, leading to further worsening of the trade deficit.

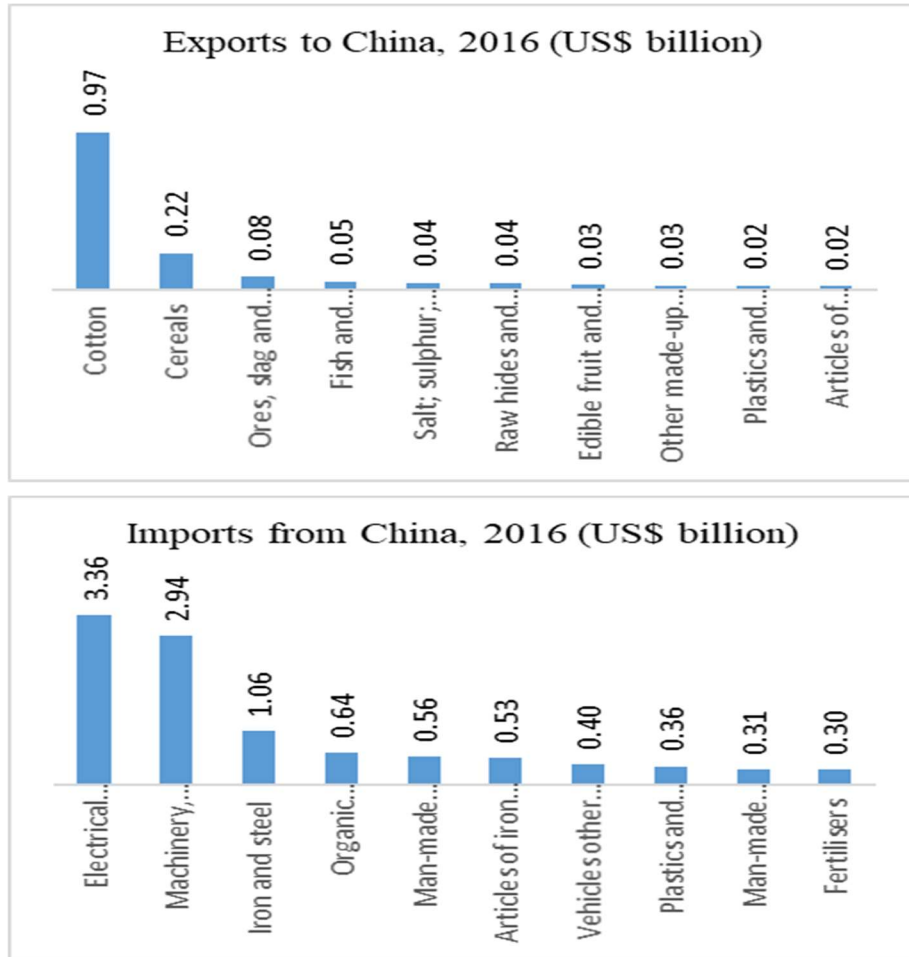
2. PRE AND POST FTA ANALYSIS

The first Phase of FTA ended in 2012. The second phase of FTA is almost in its final stage, where Pakistan has requested market access for about 57 priority items with zero percent tariff. In the second phase of negotiation, China agreed to allow 90 percent liberalization for Pakistan's exports while Pakistan reciprocated with 75 percent liberalization. China will give immediate

market access to products from Pakistan; however, a period of around ten years is specified for China.

Pakistan's prime import from China is electrical machinery, while on the export side, cotton is the major export to China (see Figure 1). The trade balance with China is negative and has widened over the years. The current trade balance is more than the double trade balance in 2012. In 2016, an 18% increase was witnessed in imports of Machinery and related products from China.

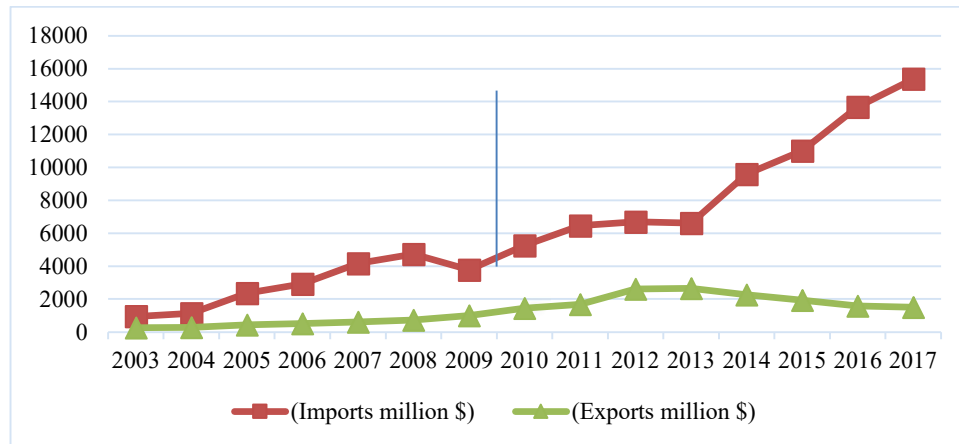
Figure 1. Pakistan’s Major Exports and Imports from China



Source: WTO.

The vertical line in Figure 2, dividing the trend into two parts, shows Pakistan’s trade with China before and after the signing of the CPFTA.

Figure 2. Pak-China Trade Trend



Source: ITC Trade Map.

After signing the FTA, Pakistan's exports to China increased significantly, registering a 279 percent increase in 2012-13 compared to 2006-07 (Pakistan Economic Survey, 2012). Likewise, China's exports to Pakistan also recorded an increase of 90 percent during the same period. However, from 2012 onwards, our exports started declining, leading to a wider trade deficit. The significant factors behind this widening were ASEAN joining FTA with China in 2010, increased import bills due to higher world oil prices, and a global economic slowdown due to lower international commodity prices. Though Pakistan's trade with China increased, a significant part of trade consists of imports.

Figure 2 shows that the trade between the two countries has increased but in China's favor. In Pre FTA, the trade deficit was narrow, while in post-FTA FTA, Pakistan's exports were almost stagnant, showing a slight increase from 2010 to 2014 (see figure 2) With few fluctuations, imports are steeply rising, causing the trade deficit to increase further. However, China's overall trade balance with other FTA partners (under study) is more favourable than Pakistan's, as presented in Table 1.

Unlike Pakistan, ASEAN (Association of Southeast Asian Nations), Chile, and New Zealand capture a larger share of Chinese imports post-FTA (see). However, Pakistan's trade increased after the FTA imports increased substantially more than exports to China.

Table 1. China's Pre- and Post-FTA Trade with FTA Partners (Harvard Atlas)

	Pre-FTA Trade (billion \$)					Post-FTA Trade (billion \$)			
	ASEAN	Pakistan	New Zealand	Chile		ASEAN	Pakistan	New Zealand	Chile
Chinese Export 2004	30.35	2.47	2.13	2.35	Chinese Export 2016	190.48	17.2	5.54	13.1
Chinese Import 2004	42.75	0.595	1.24	3.46	Chinese Import 2016	146.39	1.71	6.67	17.4
Gap (N.X.)	-12.4	1.88	0.89	-1.11		44.09	15.49	-1.13	-4.3
NX as % of Total Trade	17%	61%	26%	19%		13%	83%	09%	14%

2.1. Comparison of Chinese Tariffs for Pakistan and Other FTA Partners

The second phase started in July 2013 as part of the original FTA, aiming at removing 90 percent tariffs on all products. By the end of 2015, trade between the two countries reached US\$ 12,953 million compared to US\$ 3421 million in 2006 before the FTA (Third Review of Pak-China FTA PBC, 2016). However, overall tariff concessions offered to Pakistan remained relatively high compared to the tariffs offered to other FTA partners of China.

Table 2 compares tariff rates for GTAP aggregated sectors (Pakistan's five leading export items) under the FTA of China with Pakistan, ASEAN, Chile, and New Zealand (GTAP Data Bases).

Table 2. Comparison of Chinese Tariffs for Pakistan and Other FTA Partners

	Products	ASEAN	Pakistan	New Zealand	Chile
Chinese Tariff Rates for FTA Partners	Textiles	0	2.94	0.1	5.8
	Apparel	0	10.2	2.57	0.135
	Cereals	0	0.2	0	1
	Vegetables, Fruits	0	5.17	10.5	2.74
	Petroleum Products	0	4.51	1.03	0

Source: GTAP 9a Data Set, Base year 2011.

China offered tariff concessions to Pakistan, ASEAN, Chile, and New Zealand against the same commodities. China is offering Pakistan higher tariff rates than other China FTA partners. Due to this, Pakistan lost preference for 79% of exports to China after signing the FTA with other countries, especially with ASEAN countries. China's imports from ASEAN countries have increased from US\$ 10 billion in 2009 to US\$ 19.6 billion in 2016 (The Express Tribune, 2017).

2.2. Non-tariff Barriers-Literature Review

International trade theories such as the Gravity Model suggest that countries geographically connected will benefit most from trade. However, the global trade patterns show a different picture. For instance, in 2016, almost 50 percent of Pakistan's exports went outside the Asian region (OEC, 2016). This difference between economic theory and actual trade value is due to similar

consumer tastes, production structures, and trade barriers. Trade barriers, especially non-tariff barriers (NTBs), are of emerging concern in international trade and facilitation. The increasing complexity and extensive use of NTBs over the years have become a significant challenge to traders across the globe. According to a University of Southern California report (2016), businesses frequently complain about non-tariff measures for raising transportation costs and operating expenses, lowering competitiveness. Similarly, Ballingall and Pambudi (2016) show that non-tariff costs \$790 billion to Asia-Pacific Economic Cooperation (APEC) and increased transaction costs three times higher than a tariff in 2011. So, NTBs have a significant impact on trade flows and patterns.

The term non-tariff barriers encompass a variety of measures. Hillman (1991) defines NTBs as "all restrictions, other than traditional custom duties, which distort international trade. "These protectionist measures are non-monetary restrictions used to restrict the volume of trade and to protect local industry from foreign competition under the World Trade Organization (WTO) trade regime. WTO defines NTBs as different government policy measures that halt the flow of international trade. United Nations Conference on Trade and Development (UNCTAD) classifies NTBs as Sanitary and Phytosanitary (SPS), technical trade barriers (TBT), pre-shipment inspection and other formalities, contingent trade-protective measures, non-automatic licensing, quotas, prohibitions and quantity-control, price-control measures, and export-related measures. So, NTBs broadly cover the standards of identity, quality, and packaging measures (Thornsbury *et al.*, 1999).

NTBs have been found to be more restrictive than tariff measures and remain more harmful for agricultural trade than in technologically advanced sectors. The use of NTBs prompted after the financial crisis mainly to tackle the issues of climate change and food safety. There has been extensive use of Technical Barriers to Trade (TBT) and Sanitary and phytosanitary (SPS) measures to meet the requirements of international standardization in trade. (World Trade Report, 2012). TBTs are generally used to ensure standardization of procedural requirements, while SPSs protect human, plant, and animal life; they are frequently enforced on food trade to ensure hygienic requirements (APEC Business Advisory Council, 2016). The WTO members frequently use TBT and SPS mainly on the grounds of consumer welfare protection and environmental safety. Both measures can appear in many forms, requiring products to be free from additives, toxins, disease-causing organisms, specific product processing, and how a product is labelled and packaged (Stoler, 2011).

Different measures have different implications for merchandise trade. According to Chen et al. (2006), technical trade barriers result in the firm's diseconomies of scale and affect the firm's decision to enter the export market—further, testing and inspection procedures lower exports by 9 percent and 3 percent, respectively. Besedina (2015) evaluates the impact of TBT on export diversification at the product and market level, where NTBs in the form of complex exporting procedures hurt product and market diversification.

The extent to which non-tariff barriers restrict trade, it is essential to quantify their impact. Quantifying NTBs is generally considered promising and challenging as many technicalities as possible that are not easy to measure are involved. However, literature suggests different methods and techniques to test the relationship between NBTs and trade empirically. The first method is the Price Wedge method, which measures consumer welfare in the presence of NTBs. The second most popular method to quantify the NTBs is the Gravity Model. It studies the impact of the size of the economy, distance (cost of transportation), and other variables such as cultural differences, language, and exchange rate on the flow of trade. In addition, many studies use survey-based approaches to identify NTB regulations that have appeared more restrictive. It includes questionnaires and interviews of trading corporations, industrialists, and government officials to extract information about those NTB regulations that impede trade. Surveys help to narrow down NTBs faced most frequently, but the responses might be biased, leading to spurious estimation results. Secondly, surveys involve a high cost that makes their scope limited. These limitations of the survey-based approach are well addressed by the Inventory-Based approach. Inventory-based Approaches have become popular in qualitative and quantitative studies of trade barriers and other regulations. The inventory approach uses coverage ratio and frequency ratios to measure the frequency of various types of NTB occurrences. It identifies the sectors and countries most affected by NTBs.

In many countries like China, sanitary and phytosanitary (SPS) and technical trade barriers (TBT) measures of NTBs is actively pursued. It regularly submits TBT notifications; China submitted 106 notifications in 2015 compared to 49 in 2014 (Mustafa and Qayyum, 2017). Pakistan, an important trading partner of China, also faces its extensive non-tariff barriers regime. The prevailing NTBs significantly restrict the volume of bilateral trade between the two countries. Though the trade between Pakistan and China reached an all-time high of US\$ 13.77 billion in 2015-16, it is still restricted through tariff and non-tariff barriers (Pakistan Economic Survey, 2016). According to WTO,

China imposed 87 cases of TBT on Pakistan's exports in 2016. The products majorly affected were animal fodder, residues and waste from the food industries and organic chemicals¹.

China frequently restricts Pakistan's main exports, including edibles, cotton, electronics, and organic chemicals, through TBTs (Mustafa and Qayyum, 2017). These TBTs help China to improve its export volume as, according to Bao and Qiu (2012), countries with more TBT notifications restrict exports from other countries while increasing their exports. Generally, Pakistan's exports are affected by TBTs and SPSs mainly because of low technical know-how regarding different standards and certifications, outdated infrastructure, and lack of trained staff. Secondly, a significant section of Pakistan's exports consists of Agri-products that can carry insects, which strongly justifies SPS's imposition on the importing country. Considering the significant impact of non-tariff barriers on Pakistan's exports, the present study investigates how NTBs, specifically TBT and SPS, affect the five sample sectors leading export commodities.

3. METHODOLOGY AND RESULTS

The focus of this study is to analyse pre- and post-FTA scenarios of NTBs that cover a short period. Due to the small sample period and low frequency of data, we are not using regression analysis such as the gravity model. Similarly, some techniques, such as price wedge, estimate the welfare effects of the NTBs method, whereas this study focuses on trade diversion and export promotion. These approaches would not be able to provide meaningful results in analysis. So, the methodology of Bao and Qiu (2012) to appraise NTBs' impact on bilateral trade between Pakistan and China is followed. The Bao and Qiu Restrictiveness Index technique is simple and more appropriate. It shows how much trade is restricted with the imposition of NTBs, which the main objective of the present research is.

The study mainly focuses on Technical Barriers to Trade (TBT) and Sanitary and phytosanitary measures of NTBs because Pakistan exports frequently face these barriers in international trade (Mustafa and Qayyum, 2017). In our sample, Pakistan is exporting while China is importing country. Data on TBT and SPS is extracted from WTO, while Pakistan's export data is taken from U.N. Comtrade. TBT and SPS cases have been analysed and initiated against the five sample sectors at the H.S. 04 product level.

¹ <https://www.dawn.com/news/1367105>.

Table 3. Restrictiveness of Exports by TBT and SPS

HS Product Code	Tariff Rates	TBT Initiated		SPS Initiated		Affected Exports 000 US\$ (G)		Total Exports 000 US\$ (H)		Restrictiveness TBT=G/H (%)		Restrictiveness SPS=G/H (%)	
		2007	2017	2007	2017	2007	2017	2007	2017	2007	2017	2007	2017
HS08 (Edible fruits and nuts)	5.17	0	3	0	1	288,900	16,357,207	613,758,906	1,508,079,658	0	1.08	0	1.084
HS10 (Cereals)	0.2	1	1	0	1	307,270	95,507,373	613,758,906	1,508,079,658	0.05	6.33	0	6.33
HS13(Vegetable saps and extracts)	5.17	0	2	0	0	5,704,739	13,340,207	613,758,906	1,508,079,658	0	0.88	0	0
HS27 (Petroleum Products)	4.51	0	3	0	0	0	3,505,443	613,758,906	1,508,079,658	0	0.23	0	0
HS61 (Apparel knitted)	10.2	0	0	0	0	324,935	22,077,456	613,758,906	1,508,079,658	0	0	0	0
HS62 (Apparel not knitted)	10.2	0	0	0	0	491,744	20,219,458	613,758,906	1,508,079,658	0	0	0	0
HS63 (Textile Articles)	2.94	1	2	0	0	2,257,322	25,783,578	613,758,906	1,508,079,658	0.37	1.71	0	0

Source: UN COMTRADE and WTO.

Tabel 3 shows the comparative analysis of non-tariff barriers in FTA signed (2007) and post-FTA year (2017). The table also reflects tariff rates on Pakistan's exports to China in similar commodities. Interestingly, the sectors where tariff rates are higher face low non-tariff barriers; however, comparatively, the former is higher than the latter.

The number of TBT and SPS cases that have been initiated against Pakistani exports by China between the 2007 and 2017 period are given in the table. The restrictiveness ratio is calculated by dividing the volume of exports of a particular H.S. 4 category affected by TBT and SPS over the total exports of Pakistan. Pakistan exports faced relatively more cases of TBT and SPS in the post-FTA year compared to 2007. The restrictiveness ratio of TBT in all commodities except apparel is high in the FTA scenario relative to the start of FTA (see Table 3). Cereals (HS10) remained among the most restricted categories in TBT and SPS cases, with a restrictiveness ratio of 0.05 percent and 6.33 percent in 2007 and 2017, respectively. After cereals, edible fruits and textile articles are the most restricted products, with ratios of 1.08 and 1.71 percent, respectively, 2017. However, fruits have zero restrictiveness, indicating zero coverage under TBT and SPS, while textile has a 0.37 TBT restrictiveness ratio with zero SPS restrictiveness. In 2017, more cases of TBT were initiated against the food category and textile sector. According to Moenius (2004), cereals and edible fruits are agricultural products whose trade is negatively affected by TBT. It implies that food category exports are mostly covered under TBT measures restricting their trade. The TBT positively affects the trade of goods with characteristics not fully known to the consumers compared to those with homogenous traits such as Agri-products (Bao and Qiu, 2012). The frequency of TBT and SPS depicts that even after signing an FTA with China, Pakistan's exports face non-tariff barriers that hinder its competitive edge. One of the significant reasons behind deteriorating Pakistan's trade balance with China over the years is the non-monetary protectionist measures despite entering into a free trade agreement.

To further analyse the volume of exports and number of products restricted by NTBs, quantitative analysis is extended to the coverage ratio and frequency index for 2017.

Using the inventory approach, the study constructs the coverage ratio and frequency index analysed by Bora et al. (2002) to capture the extent of Pakistan's exports to China covered by TBT and SPS. Where coverage ratio (C.R.) is defined as "the value of exports of TBT and SPS affected product items as a percentage of total exports of a product category." such as

$$CR_g = \frac{\sum_i D_i P_i}{\sum_i P_i} \times 100$$

where, i is the export commodity included in product category g (H.S. 4). If TBT and SPS are initiated against commodity i , the dummy variable (D_i) will take 1 and 0 otherwise. P_i denotes the value of commodity i 's exports to China by Pakistan. So, a higher coverage ratio means more restricted trade of that product category g .

While frequency index (F.I.) measures the "number of product items subject to TBT and SPS as a percentage of the total number of product items in a product category," such as

$$FI_g = \frac{\sum_i D_i Q_i}{\sum_i Q_i} \times 100$$

Similarly, i is an export commodity in product category g (H.S. 4). D_i will take 1 if TBT and SPS are applied to good i and 0, otherwise. Q_i is a dummy variable that takes the value 1 in the presence of export of good i and 0 in the absence.

The current study calculates the coverage ratio and frequency index of both TBT and SPS for H.S. categories of H.S. 08, HS10, HS13, HS27, HS61, HS62, and HS63.² The export coverage ratio of TBT (CR-TBT) estimates the proportion of affected exports within a product category (for example, H.S. 4), ranging from 0 (zero coverage) to 100 (covering all items) such as HS08 has 14 product items, HS0801, HS0802, HS0803, HS0804, HS0805, HS0806, HS0807, HS0808, HS0809, HS0810, HS0811, HS0812, HS0813 and HS0814 with total exports of US\$ 16.357206 million). TBT covers four product items with total exports of US\$ 16.35 million. Except for these four products, exports in other items are zero. So, CR-TBT and CR-SPS of HS08 are equal to 100 % (16.357206/16.357206). The CR-SPS of H.S. 10 is equal to 100 %. Similarly, CR-TBT for H.S. 63 is 0.043%, whereas only 1 product's exports are covered

² HS8 represents fruit and nuts, edible; peel of citrus fruit or melons Chapter, HS10 Cereals Chapter.

HS13 Lac; gums, resins, and other vegetables saps and extracts; HS27 Mineral fuels, mineral oils, and products of their distillation; bituminous substances; mineral waxes, HS61 Apparel and clothing accessories; knitted or crocheted, HS62 Apparel and clothing accessories; not knitted or crocheted HS63 Textiles, made up articles; sets; worn clothing and worn textile articles; rags.

by TBT out of 10 products. Though the textile sector faced significant non-tariff barriers during 2017 for parallel group Apparel (HS61 and HS62), no cases of TBT and SPS were initiated (that is, F.I.-TBT, SPS, and CR-TBT, SPS are zero).

F.I. of TBT (F.I.-TBT) measures the number of products affected by TBT within a particular product category, for example, HS4. It varies from 0 (zero coverage) to 100 (covering all products). In F.I., the number of products covered by TBT is divided by the total number of products in that category. FI-TBT of HS08 equals 100 % because TBT is initiated against those four products where exports occur within this category. Similarly, FI-SPS is equal to 100 %. The textile category is also covered under TBT with 12.5 % F.I.-TBT, where 1 product is covered among 10 products. Whereas F.I.-SPS is zero, indicating no Sanitary and Phytosanitary barriers in the way of textile exports in 2017 by China.

Cereals (HS10) and edible fruits (HS08) remained a highly restricted category as their exports are fully covered under TBT and SPS, evident from 100% coverage ratios and frequency indexes of both TBT and SPS. Unlike cereals, vegetable exports experienced free flow with no/zero coverage of TBT and SPS during 2017. The mineral products exports only face technical barriers with FI-TBT and CR-TBT at 100 percent.

Our analysis suggests that Pakistan exports are subject to many TBT and SPS cases despite being in post-FTA years. Technical barriers to trade and sanitary and phytosanitary barriers mainly hinder cereals, edible fruits, and textile sectors. One of the reasons for these NTBs could be the inefficient technologies used in manufacturing and non-conformity to international standards owing to the country's ambiguous system of certification and standardization. Apart from these, many businesses fail to meet TBT and SPS standards mainly because of the higher costs of complying with NTB requirements (Mustafa and Qayyum, 2017). Following these impediments, the Ministry of Commerce is taking initiatives to facilitate trade by removing these NTBs and tariff barriers. Strategic Trade Policy Framework 2015-18 gives investors investment and markup support programs to upgrade technology and facilitate certification and standardization. Based on the findings, the policy measures suggest that the focus should be on negotiating NTBs in the food category and textiles subject to higher cases of TBT and SPS under future trade negotiations.

4. CONCLUSION AND RECOMMENDATIONS

China is the largest trading country in the world, bordering Pakistan on the western side. Pakistan and China signed an FTA in 2006 to increase the trade volume among each other. After signing the FTA, Pakistan's trade has increased, but the central part consists of imports, leading to the widening of the current account deficit. The analysis carried out in the study shows the relatively high tariff rates on Pakistan's top five exports offered by China as compared to its other FTA partners and high coverage of non-tariff barriers. Though Pakistan has a comparative advantage in these commodities, due to high tariffs, they become relatively less competitive. One of the reasons that led to the trade deficit between China and Pakistan concerning other FTA partners can be the tariff imposed on Pakistani exports. The tariff concession differential by China to Pakistan and other FTA partner countries clearly shows the uneven playing level among free trade partners where effective negotiations are seriously required. Conversely, non-tariff barriers also restrict Pakistan's exports to China. Based on the findings of the restrictiveness ratio, converge ratio, and frequency index, cereals, edible fruits, and textile sectors are found to be highly covered under TBT and SPS despite the free trade agreement.

CPEC, in this scenario, can be used as a breakthrough to fill the export-import gap through its various agreements in trade, connectivity, and energy sectors. The linkage of Gwadar port to Xinjiang province (China) will help Pakistan expand its trade interaction with the rest of the world, thereby solving its many supply-side constraints (Kamal and Malik, 2017). Developments under the CPEC project may also be linked in several ways. First, Figure 2 exhibits that after the inauguration of CPEC, the imports of Pakistan from China have exponentially increased, mainly due to the import of machinery and equipment pertinent to CPEC energy and infrastructure projects. The resulting trade deficit is beneficial if it contributes to increasing the productive capacity of local industry and decreasing transaction costs. Second, the initiative of industrial cooperation under CPEC and the development of special economic zones can support the production of high-value-added products, exportable surplus, and diversification of export baskets mainly through backward and forward linkages with the global value chain envisaged in CPEC's long-term plan. Third, being the flagship program of BRI, the tariff and non-tariff barriers can be further negotiated under trade and economic cooperation and may have a favorable effect on net exports. Fourth, the agreements under CPEC may contribute to improving market access and discovering new markets. Fifth, export-oriented Chinese industries can be relocated to the special economic

zones under CPEC. It may provide technology and skill spillovers to local industries.

Recommendation for Second Phase

- 1) More focus should be on services liberalization (as of the 2009 Services Agreement). In this regard, the potential of information technology (I.T.) and the banking sector should be effectively exploited.
- 2) Import intermediate commodities or low-value chains from China and export high-value chain/final commodities to China.
- 3) Products in which Pakistan has a comparative advantage and competitive edge should be exported to China.
- 4) Identify and export products facing relatively less competition in the Chinese market.
- 5) In FTA, more efforts should be made to reduce NTBs in sectors highly affected by TBT and SPS, such as cereals, edible fruits, and textiles.
- 6) Effective negotiations with China on the right of Most Favoured Nation (MFN) status to provide the same concessions as provided to some other FTA partners such as ASEAN.
- 7) Trade Agreements should be negotiated in the light of strategic relationships. In this regard, the strategic trade policy framework should be implemented in true spirit in collaboration with key stakeholders, including exporters, think tanks, and economic ministries.

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Appendix

Table 4. Frequency of TBT Enforced by China on Pakistan's Export

H.S. Code	Description	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
08	Edible Fruits and Nuts	0	1	0	0	9	1	0	1	0	0	0	4	3
10	Cereals	0	1	1	3	9	1	0	1	0	0	0	4	1
13	Vegetable Saps and Extracts	0	0	0	0	0	0	0	0	0	0	0	0	2
2710	Petroleum Products	0	1	0	0	2	0	0	0	0	0	0	3	3
61	Apparel (knitted)	1	0	0	2	0	0	0	0	0	0	2	0	0
62	Apparel (not knitted)	1	0	0	2	2	0	0	0	0	0	2	0	0
63	Textile Articles;	2	1	1	3	3	0	0	0	0	0	1	0	2

Family Pornography and Undergraduates Sexual Behaviour in Public Tertiary Institutions in Ogun State, Nigeria

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Abstract

This study examined family pornography and undergraduate sexual behavior in public tertiary institutions in Ogun State, Nigeria. The study uses a cross-sectional survey design and selects 400 respondents for this study. We validate the questionnaire by assessing respondents' responses using Cronbach alpha (score = 0.87). The hypotheses were formulated and tested using Multiple Regression and Chi-square at a 5% significance level. The results indicated that family pornography predicted the undergraduates' sexual behavior and family type also influenced the undergraduates' sexual behavior. The results further revealed that age, gender, religion, and family structure had significant relationships on sexual behavior but not with the ethnical background and academic discipline of the students. It recommends that parents should not be left alone in this campaign. Other agents of socialization, such as school and religious organizations, should also see that adolescents are informed about sexualities and the risks involved in risky sexual behaviors.

Keywords: Family, pornography, undergraduates, sexual behavior, public tertiary institutions

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1. INTRODUCTION

Sexual behavior among youths has been a focus of health programs worldwide since the International Conference on Population and Development (ICPD) in 1994. For more than two decades, various non-governmental Organisations (NGOs), government agencies, and parastatals have investigated adolescents' reproductive health issues. Youth sexuality and sexual behavior remain challenging in most developing countries, including Nigeria.

Not until recently, adolescents in Nigeria were seen as a healthy segment of the population and received low priority for services. However, biology and society bring on additional health challenges resulting from early

exposure to sex, unprotected sex, violence, and substance abuse (Adefalu and Ayodele, 2019). Adefalu (2018) posited that adolescents in Nigeria have a high burden of reproductive health problems. This assertion supported earlier surveys conducted on the National Demographic Health Survey (2008), National HIV/AIDS and Reproductive Health Survey (2007), and Integrated Biological and Behavioural Surveillance Survey (2010). These Surveys revealed that 46.2% of female adolescents and 22.1% of males (22.1%) have engaged in sexual intercourse. This figure varies from state to state. For some states like Ogun, it can be as early as 15 years (Ayodele and Akindele-Oscar, 2014).

Sexual behavior is how humans and other animals demonstrate and express sexuality. It is how humans experience and express their sexuality (Saowanee *et al.*, 2018). The birth of a new sibling, peeping at another child or adult through any immense opportunity in the bathroom, or looking at their mother can trigger or amplify children's sexual behaviors. These behaviors tend to be momentary, distractible, and diminish once the child understands that such behaviors are inappropriate, particularly for public viewing (Oluwatoyin and Oyetunde, 2014).

Adolescents who reside in homes with family nudity, co-bathing, or less privacy when dressing, going to the bathroom, or bathing or in which sexual activities are occurring are more likely to engage in sexual behaviors (Chandrarekha *et al.*, 2018). Reactions from others of embarrassment and shame may be misinterpreted as positive responses, prompting the child to persist in sexual behavior (Kirubel *et al.*, 2019).

However, family pornography (FP) is the conjugal act of the family, especially the parents, exposing their children to unconsciously the mindset that "they are kids, they know nothing." This act may be in the form of bathing and dressing up before the children, and worst still, parents having sexual intercourse while the children are awake in the same room. Family pornography, therefore, is the explicit description or exhibition of sexual activity unintended to stimulate erotic emotions. The effect it has on the children's feelings, attitudes, and sexual behavior is not always immediate but has a lasting effect on their behavioral and emotional wellness (Ayodele, 2018). He observed that FP had been regarded as a source of sex information since it has been found that children learn about the mechanics of sex from home.

Nigerian youths who are under the influence of family pornography may engage in various sexual acts, ranging from activities done alone to acts with another person in varying frequency patterns, for various reasons (Yohannes, 2018). Sexual activity of such students usually results in sexual arousal and physiological changes in the aroused adolescents.

Over time, the researcher has noticed problematic sexual behavior, which has been gradually getting out of control. It has caused most of the students to have different sexual diseases, unwanted pregnancies, complications with pregnancy, rape, school dropouts, sex addiction (which are caused by the early practice of sexual activities), and suspension from schools due to sexual immorality. This study, therefore, assessed the prediction of family pornography on undergraduates' sexual behavior. The specific objectives of this study are to examine how family pornography, structure, and students' socio-demographics indices would predict undergraduates' sexual behavior.

2. THEORETICAL FRAMEWORK

The Theory of Reasoned Action developed by Fishbein and Ajzen is the basis of the study. This theory reflected that an individual's behaviors are often caused by his or her intention as a function of attitude toward performing the act and normative beliefs about it (Fishbein and Ajzen, 1975). The Theory of Reasoned Actions model emphasizes four elements: the action, the object of the action, the situation, and the time the action is performed. The model also revealed that there would be a high correlation between attitude and behavior if measured on the same level. This model's four elements best explain how sexual behavior and attitude interact. Several students agreed to engage in sexual behavior because of certain conditions like agreement or love for each other without being forced. Invariably, sexual behavior could interact with family pornography, structure, and even their sociodemographic indices.

Hypotheses

1. Family pornography will not significantly predict undergraduates' sexual behavior.
2. The family structure will not significantly predict undergraduates' sexual behavior.
3. Respondents' socio-demographics (age, gender, ethnicity, religion, discipline, and family structure) will not significantly affect their sexual behavior.

3. METHODOLOGY

3.1. Design

The study adopted a descriptive survey research design of ex-post-facto type. It enabled the researcher to carefully analyze the sampled population to

infer the reasons for predicting undergraduates' sexual behavior through family pornography.

3.2. Sample and Sampling Procedure

The study sample comprised 400 students randomly selected from five (5) randomly selected public higher institutions in Ogun State, Nigeria. The selected higher institutions were Olabisi Onabanjo University, Ago-Iwoye; Tai Solarin University of Education; and University of Agriculture, Abeokuta, Federal Polytechnic Ilaro and Moshood Abiola Polytechnic, Abeokuta. Eighty (80) students were selected from each institution using a disproportionate stratified sampling technique to make 400 students. The choice of the higher institutions and students was made because they possess the same characteristics and the level of freedom enjoyed by the students of these institutions.

3.3. Instruments

The research instrument for the research was tagged "Family Pornography and Sexual Behaviour Questionnaire (FPSBQ)." The 38-item self-developed questionnaire consisted of 3 subscales on socio-demographics (6 items), family pornography (22 items), and sexual behavior (12 items). Sample items include family pornography: "The thought of seeing other's nakedness makes me sexually aroused"; and sexual behavior: "I believe that kissing is acceptable for the female/male before marriage when s/he is engaged to be married." we constructed the family pornography and sexual behavior items in a six-point Likert format measured along Strongly Agree (6), Moderately Agree (5), Slightly Agree (4), Slightly Disagree (3), Moderately Disagree (2), and Strongly Disagree (1).

A reliability test uses the test-retest method to determine the instrument's reliability. The instrument was validated by giving it to experts to examine and assert its suitability and appropriateness regarding the item content and purpose of the study. The results produced a reliability estimate of 0.87.

3.4. Procedure

The researcher personally visited the institutions selected for the study with the assistance of two trained research assistants. The school registrars were contacted to request their support and permission to collect student data. The instruments were administered to the respondents willing to participate (that is, their consent was sought before the administration). The respondents fill in the

instruments independently before returning them to the researcher with the assurance of confidentiality.

3.5. Method of Data Analysis

The completed questionnaires were checked to ensure they were filled in correctly. All the inventories were returned; ten were void, while 390 were used for analysis. Thus, 97.5% success in inventory administration was recorded. Multiple Regression and Chi-square statistics were used to analyze the data collected. The results at the 0.05 level of significance were tested.

4. RESULTS

The results in Table 1 indicated that the predictor variable (family pornography) in the regression model predicted the undergraduates' sexual behavior ($R = .585$, $R^2 = .342$, $Adj. R^2 = .337$, $beta = .385$, $t = 4.514$, $F_{(1, 389)} = 15.689$, $p = .000$). This showed that the predictor variable accounted for 33.7% of the variance in the undergraduates' sexual behavior. The null hypothesis, which stated that "Family pornography will not significantly predict the undergraduates' sexual behavior," was rejected by this finding. It implies that the undergraduates' sexual behavior was significantly predicted by family pornography.

Table 1. Summary of Multiple Regression Analysis of the Influence of Family Pornography on Undergraduates Sexual Behavior

Model	Unstandardised Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	34.444	3.324		10.363	.000
Family Porn	-1.480	.296	-.385	-4.514	.000
	Sum of Squares	df	Mean Square	F	Sig.
Regression	169.910	1	169.910	15.689	.000 ^b
Residual	4212.870	389	10.830		
Total	4382.278	390			

$R = .585$, $R^2 = .342$, $Adj. R^2 = .337$, $SE = 3.299$

a. Dependent Variable: sexual behavior

b. Predictors: (Constant), family porn

The results in Table 2 indicated that the predictor variable (family type) in the regression model predicted the undergraduates' sexual behavior ($R = .234$, $Adj. R^2 = .054$, $eta = .017$, $t = 4.514$, $F_{(1, 389)} = 3.609$, $p = .000$). This showed that the predictor variable accounted for 5.4% of the variance in the undergraduates' sexual behavior. The null hypothesis, which stated that "Family type will not significantly predict the undergraduates' sexual behavior,

"was rejected by this finding. This implies that the undergraduates' sexual behavior was significantly predicted by family type.

Table 2. Summary of Multiple Regression Analysis of the Influence of Family Structure on Undergraduates Sexual Behavior

Source	Type III sum of squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	92.530	1	92.530	3.609	.031	.017
Intercept	479093.014	1	479093.014	3151.349	.000	.899
Family Type	92.530	1	92.530	3.609	.031	.017
Error	53665.848	386	152.028			
Total	635116.000	389				
Corrected Total	53758.377	390				

R-Squared= .234 (Adjusted R Squared=-.054).

Table 3. Respondents' sociodemographic variables and their sexual behaviors.

Sociodemographic Variables	Frequency	Chi-Square	df	P	
Age	15 – 20 years	251	72.69	2	.000
	21 – 26 years	92			
	27 – 32 years	47			
Gender	Male	169	21.34	1	.009
	Female	221			
Religion	Christianity	286	10.78	1	.000
	Islam	104			
Ethnicity	Igbo	76	5.43	3	.209
	Hausa	38			
	Yoruba	251			
	Others	25			
Academic discipline	Science Related	197	3.10	1	.551
	Non-science Related	193			
Family Structure	Parents living together.	29	59.11	4	.000
	Living with both parents	30			
	Living with mother alone	64			
	Living with father alone	46			
	Living with a family member	52			

The result of the chi-square test to test the significant relationship between sociodemographic characteristics of the respondents and sexual behavior revealed that there was a significant relationship between the age (chi-square = 72.69, P = .000), gender (chi-square = 21.34, P = .000) religion (chi-square = 10.78, P = .000), family structure (chi-square = 59.11, P = .000) and

sexual behavior but not with their ethnical background (chi-square = 5.43, $P = .209$) and academic discipline of the students (chi-square = 3.10, $P = .551$).

5. RESULTS

This study examined family pornography and undergraduate sexual behavior in public tertiary institutions in Ogun State, Nigeria. The first hypothesis indicated that undergraduates' sexual behavior was significantly predicted by family pornography and that about one-third (33.7%) of sexual behavior exhibited by undergraduates is a result of various forms of family pornography that they were exposed to, which is in line with the model of the theory of reasoned action. The implication is that family pornography is a predictor of undergraduates' sexual behavior. When sexual scenes or contents of what children are exposed to at home become part of what they learn daily, there is a high possibility that it can trigger their libidinal energy, prompt them to engage in early sexual practices, and influence their sexual behavior in totality. This aligns with Orluwene, Ekechukwu, and Ojiugo's (2015) findings, which indicated that the family environment and parents play an essential role in determining whether the children raised in that family will be well-adjusted and responsible.

The results of the second hypothesis revealed that the undergraduates' sexual behavior was significantly predicted by family type. This result implies that how the family is structured provides a salient development context in that children grow up usually having primary relationships with one or two biological parents and with or without older and younger siblings. This result is in tandem with the findings of Awaluddin *et al.* (2015) and Oluwatoyin and Oyetunde (2014). Their various studies revealed that the home plays a significant role in activating most sexual behavioral responses of adolescents. Furthermore, the sexual activities of today's adolescents have given liberty closeness to reckless sexual activities, resulting in an unhealthy sexual reproductive life due to how homes are structured today. Adolescents who reside in homes where there is family nudity, bathing, or less privacy when dressing, going to the bathroom, or bathing or in which sexual activities are occurring are more likely to engage in sexual behaviors (Chandrarekha *et al.*, 2018).

The sociodemographic correlates of respondents' family pornography and sexual behavior showed that age, gender, religion, and family structure correlate well with family pornography and sexual behavior but not with their ethnical background and academic discipline. This result is like that of

Ayodele, Olanipekun, and Akinlana (2015) that despite religious, cultural, and legal sanctions against premarital sex, dramatic changes in sexual attitudes and interactions have become a familiar and widely accepted part of romantic relationships regardless of culture, gender, age, and religion. Oladeji (2013) reported that 34% of early adolescents and 61% of late adolescents reported having sexual intercourse, and 7% of high school students said they first had intercourse before age 13 (Grunbaum *et al.*, 2000). Ayodele (2011) found in his study that 89.3% of males and 91.2% of females have had sexual intercourse in the last six months. Out of these, 6.1% of males and 28.8% of females had experienced attempted forced sex or forced sex.

This study has implications for research and work counsellors since it has shown that family pornography influences the sexual behavior of tertiary institution students; concerted efforts are required to draw up or review existing curricula for tertiary schools to take cognizance of the likely variables that could hinder the marital adjustment of these students in future. Researchers can provide appropriate enrichment programs and therapeutic strategies to educate young adults on profitable modes of premarital behaviors.

6. CONCLUSION

Family pornography is an unintentional and unconscious act, and it harms the children's psyche, which can go a long way toward becoming a behavior that shapes their personality. From the research findings, it was concluded that family pornography predicts undergraduate sexual behavior. In this case, parents need to be careful and watchful of their actions around their children because children learn a lot from them, both good and bad.

Since the home is the first socialization unit, parents should be mindful of what they do in their children's presence regardless of age and limit exposing their bodies to their children. When positive sex education begins from home, both male and female adolescents will focus more on what would better their chosen career or future.

Good parental relationships should be given optimum attention to help adolescents live decent sexual lives and help them delay sexual activities until they are mature enough to handle such sensitive issues.

Parents should not be left alone in this campaign. Other agents of socialization, such as school and religious organizations, should also see that adolescents are well-informed about sexualities and the risks involved in risky sexual behaviors.

The government and other relevant agencies should also take it as part of their responsibility to ensure that there are functioning programs that explicitly address adolescent reproductive health issues in Nigeria.

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A Rasch Analysis of Achievement Goal Orientation Scale in Language Education Context

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Abstract

Motivation plays a crucial role in determining students' academic achievement. An important aspect of motivation is student achievement goals or Achievement Goal Orientation. The trichotomous model of Achievement Goal Orientation has been widely used: Mastery Goal Orientation, performance approach Goal Orientation, and Performance-Avoidance Goal Orientation. Educators must be familiar with the orientation students adopt, as it shapes their approach during teaching and learning. This paper examines the validity and reliability of Achievement Goal Orientation in a language education context. One hundred twenty-three secondary school students attended the survey, involving 55 (44.7%) males and 68 (55.3%) females. The instrument was adopted from Elliot and Church's Achievement Goal Orientation Questionnaire (1997) and was modified into the language domain. The initial version of the instrument consisted of 20 items, while the final version, after modification, consisted of 13 items. The Rasch Measurement Model was used to validate the instrument. All the psychometric properties confirmed the validity and reliability of the instrument. Rasch analysis revealed that the scale showed strong evidence of validity and reliability in the language education setting. It is suggested that language teachers and experts use the scale to improve language learners' performance. The findings of this study may be tested in other fields of study to get more robust validation results for further validation of the scale.

Keywords: Achievement Goal Orientation, Scale Validation, Rasch Model Analysis, Language Education Context

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1. INTRODUCTION

Achievement Goal Orientation is one of the most significant aspects of students' development in the learning process (Alhadabi and Karpinski, 2020; Mascaret, 2015). Student Achievement Goal Orientation is based on how students perceive their competencies during teaching and learning (Tapola and

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Niemivirta, 2008; Guo and Leung, 2021). In this regard, it has already been found that the most widely accepted Achievement Goal Orientation is the Trichotomous Model. This model comprises three types of orientation, namely Mastery Orientation (to enhance competency), Performance-Approach Orientation (to demonstrate competency), and Performance-Avoidance Orientation (to avoid demonstrating incompetency) (Elliot and Harackiewicz, 1996). Each orientation has a different influence on students' development in the learning process and determines their performance. Generally, Mastery Orientation has an adaptive value (Anderman and Wolters, 2006; Kaplan and Maehr, 2007), while Performance-Avoidance Orientation has a maladaptive value. Meanwhile, Performance-Approach Orientation has adaptive (Harackiewicz *et al.*, 2002) and maladaptive values on the student's learning process and performance (Voon and Voon, 2020). Hence, teachers and parents need to know students' orientations, especially in the language learning process.

In the process of learning, motivation occupies a unique position (Darvin and Norton, 2021). As a construct, it is rooted in many theories, such as self-efficacy theory (Bandura, 1997), self-determination theory (Ryan and Deci, 2000), and psycho-dynamic theory (Westen, 1998). In English language education, teaching and learning are essential elements of school curricula worldwide (Sudarmo, 2021; Richards, 2015; Hall, 2017). It is included in the curriculum as an important and compulsory subject in many countries. Considering its essential role in developing human capital, language, especially English, occupies an enviable position as one of the critical subjects in the education curriculum worldwide (Pennycook, 2017; Halimovna, 2020). Its contributions to human capital development have been observed and become prominent, which can be seen in the form of its integration with other subjects, including Geography, Physics, Chemistry, Biology, and Science in the school curriculum of many countries (Jaborrov, 2020; Hedgcock, and Ferris, 2018).

Many studies have used the item response theory (IRT) method for validating educational instruments in social science fields. Researchers have called IRT analysis a valuable addition to the testing theory approaches (Fadli *et al.*, 2019). It focuses on items' quality in measuring underlying constructs (Chan *et al.*, 2021). In this regard, the Rasch model analysis may give the researchers more confidence to apply the scale in English language education. The arithmetic properties of the interval scale provide comprehensive information on the interactions between persons and items. The Rasch model's application within goal orientation measurements has expanded in recent years. It has been used to analyze the possible psychometric cause of earlier

inconsistencies between models of achievement goal theory and other constructs (Nur *et al.*, 2020).

Hence, the current study aims at validating the goal orientation scale in language teaching and learning context, especially to bridge this gap in the current psychometric research by analyzing the model data fit of items using a multidimensional Rasch model analysis in this study. This study will further contribute towards using the Achievement Goal Orientation Scale in language studies teaching and learning in school, which has yet to be focused appropriately. Applying the validated scale using the Rasch analysis approach may provide easy access to teachers to explore language-related problems, motivate students to language learning, and overcome the barriers to language learning in a language class (Hall *et al.*, 2015; Miller *et al.*, 2021).

2. GOAL ORIENTATION ACHEIVMENT

The Trichotomous Model of achievement goal orientation is based on the Hierarchical Model of Achievement Motivation, initially developed by Elliot and Church in 1997 (Chang and Song, 2020; Reeve, 2005). Achievement Goal Orientation is related to achieving the needs and avoiding failures. A person who concentrates on achievement will engage in behavior related to a task or accomplishment. On the other hand, avoiding failure is the opposite of the need to achieve, which inhibits one's effort to achieve a task or behavior (Chen, 2015). The hierarchical model of achievement motivation revolves around the motive to achieve and avoid failure. The motive to achieve is related to Mastery Goal Orientation and Performance-Approach Orientation. The motive to avoid failure is associated with the performance approach and Performance-Avoidance Orientation (Elliot and Church, 1997), as illustrated in Figure 1.

Based on the model, Elliot, and Church (1997) have developed an 18-item questionnaire to measure the strength of each goal. Several other studies on Achievement Goal Orientation report a good reliability value of the construct (Table 1). However, the studies have their purposes and various target groups. Hence, this paper attempts to ensure the validity and reliability of the instrument modified into the language domain by targeting the students in Pakistani language classrooms.

Figure 1. Hierarchical Model of Achievement Motivation

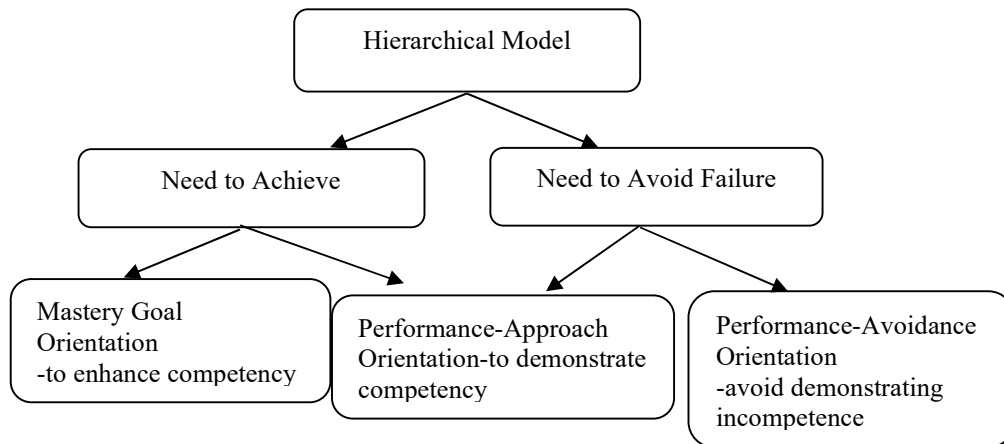


Table 1. Reliability Value for Construct Measuring Achievement Goal Orientation

Researcher(s)	Reliability			Focus
	Mastery Orientation	Performance-Approach Orientation	Performance-Avoidance Orientation	
Lavasani et al. (2011)	0.79	0.85	0.81	Domain: Educational Science and Psychology. Target Group: Tehran undergraduate students
Malmberg (2008)	0.77	0.81	0.67	Domain: Secondary school grade Target Group: U.K. student teachers
Luo et al. (2011)	0.84	0.88	0.80	Domain: Mathematics Target Group: Singapore secondary school students
Dupeyrat et al. (2011)	0.86	0.89	0.73	Domain: Mathematics Target Group: French secondary school students
Luo et al. (2011)	0.81	0.86	0.78	Domain: English Target Group: Singapore secondary school students
Rostami et al. (2011)	0.77	0.81	0.67	Domain: English Target Group: Tehran secondary school students
Zare et al. (2011)	0.76	0.75	0.79	Target Group: Athletes

3. INSTRUMENT VALIDATION

A questionnaire is a helpful tool for collecting intended information in descriptive survey studies because it helps to collect extensive data that is usually difficult to observe directly (Protogerou and Hagger, 2020). Generally, there are three ways to select a survey instrument: i) use an existing instrument, ii) develop a new instrument, or iii) adapt an existing instrument (Adam, 2020). The rationale for choosing the most appropriate approach is based on the objective(s), purpose(s), types of analysis used, and the most important aspects to be considered. This is an instrument with good reliability and validity. For this study, the instrument used was an adaption from an existing questionnaire, the Achievement Goal Questionnaire, developed by Elliot and Church (1997). This questionnaire was deliberately chosen as it had the same intention and addressed the same outcomes from the survey. Besides, many studies have proved its reliability and validity. Hence, only some items were added, deleted, or modified to contextualize and focus the Students' Achievement Goal Orientation on language teaching and learning in the Pakistani context.

Validity and reliability are the most essential elements to be tested before a questionnaire is used (Findley *et al.*, 2021). Validation of an instrument is mandatory in collecting data since it is the tool to infer specific issues or problems (Gagné *et al.*, 2015). Hence, a high-quality instrument interprets the collected data in meaningful ways that may be applied in general, not only to the tested sample (Binti Dawood, 2021). Since a questionnaire usually measures subjective variables such as intelligence, future goal orientation, and others, validating it is somewhat challenging and needs to be carried out carefully. High care must be demonstrated, mainly when the tested variable is influenced by a range of factors that are hard to control (Baldus *et al.*, 2015). Validating a questionnaire provides several advantages, especially in interpreting the collected data. One stage in the validating process is checking the word selection, terms used, and grammatical aspects. Detection of ambiguities and misinterpretations can reduce bias. Hence, ambiguities must be minimized in an instrument to ensure its objectivity. Besides that, in piloting the questionnaire, the elements of feasibility, acceptability, consumption of time, and energy can be pre-examined (Sushil and Verma, 2010). On top of that, the focus in validating a questionnaire is to confirm that the construct and items involved are measuring what they are supposed to.

4. RASCH MODEL IN THE CONTEXT OF GOAL ORIENTATION MEASUREMENT

Validation aims to establish the reliability of a measuring instrument (Chan *et al.*, 2021). The mechanism is confirmed as a tool to measure the intended concept and be a reflector of reality (Nur *et al.*, 2020). In contrast, reliability is the concept of testing an instrument to ensure its stability and consistency in producing similar results when administered repeatedly in different conditions (Fadli *et al.*, 2019). Generally, validation of an instrument involves the process of face, content, discriminant, and construct validity, while the reliability test involves internal consistency and split-half or test-retest reliability (Chua, 2006). Face validity is the most straightforward validation process, but it is not a potent form of validation. It usually occurs at the initial phase of validation. The purpose of conducting face validity is to examine the appropriateness of items and ensure that the questionnaire includes relevant constructs and items for measuring the variables (Su *et al.*, 2020). Appearances of the instrument regarding style, formatting, language clarity, readability, and feasibility are also checked thoroughly. In addition to face validity, content validity refers to representing items to cover all aspects of a given social concept (Gall *et al.*, 2003). In other words, it concerns the extent of the instrument that reflects the concept measured (Institute for Health and Care Research, 2010). This kind of validity is also established by having a review from experts in the subject matter (Jansen, 2007). For this study, expert reviews were taken to ensure the construct and suggested items measured and covered the concept of Student Achievement Goal Orientation in Language. After getting the face and content validity, construct and discriminant validity are then assessed. Both are complex to be measured. Construct validity intends to measure the consistency of the test measure to the relevant theoretical abstract, concept, or construct (Kane, 2001).

Simply put, it determines the goodness of fit of model components. On the other hand, discriminant validity is used to determine the degree of actual differences between groups and detect no difference when there is none. This study used the Rasch Measurement Model to confirm the construct and discriminant validity. Besides the validity, a good questionnaire must be reliable, indicating how well the items fit together conceptually (Dedeoğlu *et al.*, 2020). One of the ways to measure it is Cronbach's Alpha Correlation Coefficient. The suggested acceptable internal consistency, which many measurement experts agree upon, is that it should show only a moderate correlation among items (0.70 to 0.90). Rasch Measurement Model is a

powerful statistical tool. It is a more reliable and valid assessment (Saidfudin, 2011). The underlying basis of the Rasch Measurement Model is the Item Response Theory, which strongly emphasizes the items and the persons involved in the study. The model gives users a clear picture of the interrelationship between the persons and the variables being assessed. To confirm the item validity in an instrument, the items must differentiate between persons' high and low ability. Otherwise, the things need to be modified or eliminated. This matter can be reflected in the Rasch Model's item reliability analysis, confirming the instrument's construct validity. Furthermore, the utmost advantages of using Rasch Analysis are that it is the only model that can fulfill the requirement of a good measurement model that can produce linear measurements, overcome missing data, detect outliers, give estimates precision, and provide independent measurement instruments (Nur *et al.*, 2020).

5. PROBLEM STATEMENT

Many studies have examined the validity of the Achievement Goal Orientation Scale in numerous fields of study. However, little evidence exists from the Pakistani secondary education context about its application, and it has not been seriously used in the language teaching and learning domain. This study was purposefully designed to evaluate the validation features of the Achievement Goal Orientation Scale in the language education domain in the Pakistani secondary school education system to provide more evidence for its usefulness and application in a different cultural context.

This study aims to validate achievement goal orientation in Pakistan's language education context.

6. METHODS AND MATERIALS

6.1. Sample

A total of 123 private secondary school students in district Chitral Pakistan were chosen as a convenient sample in this study, in which 55 of them (44.7%) were males, while the rest (n=68, 55.3%) were females as presented in Table1. The study was conducted as a pilot study in one English medium secondary school (Shaheen Public School Chitral) pseudonym, considered one of the best schools among the renowned private secondary schools in the area in terms of its academic results. The students cooperated by showing willingness to participate in the study. Other schools did not cooperate fully to

allow the students to be part of the research due to personal reasons. The researchers received verbal consent from the students during the distribution of the instrument. No written consent forms were given to the sample to get their formal support to participate in the study. The school administration also showed full cooperation during the data collection process. To ensure the suitability of the instrument to a wider range of students, the samples were selected from the Science Stream and Arts Stream who had taken English as their compulsory subject. The students were given a set of questionnaires, which took about 20 minutes to complete.

Table 1. Sample of Study

School	District	Selected Sample	Percentage %
Shaheen Public School	Male	55	44.7
	Female	68	55.3
	Total	123	100

6.2. Instrumentation

Instrument validation is a complicated process. Many steps must be followed in validation, such as scale development, item generation, pilot testing, data collection, and analysis (Hinkin, 1995). The instrument used in this study was adapted from Elliot's Achievement Goal Orientation Questionnaire, which was modified into the language domain. The underlying theory behind this instrument is the Achievement Motivation Theory. Three primary constructs in this questionnaire measure the Student Achievement Goal Orientation in learning language subjects.

6.3. Procedure of Study

Firstly, the original item of Elliot's Achievement Goal Orientation Questionnaire was modified into the language domain. Then, it was given to experts and students for review. After taking their feedback and comments, the interim version of the questionnaire was distributed to 123 samples to collect their responses (Olson, 2010). The collected data were analyzed using the Rasch Measurement Model to confirm the reliability and validity.

7. FINDINGS OF STUDY

The study's findings, including the results of testing the initial and interim versions of the instrument, are discussed below.

7.1. Testing the Initial Version of Items

Initially, there were 18 items, of which six measured each of the Achievement Goal Orientation, as shown in Table 1 (Mastery, Performance-Approach, Performance Avoidance). Each item uses a 4-point Likert scale running from strongly agree to disagree strongly. The highest mean value determines which orientation the students adopt more.

7.2. Expert Review

After completing the item development process, the initial version of the questionnaire was given to experts to evaluate face and content validity. The experts were asked to determine whether all the items qualified to be included in the questionnaire. For this purpose, the expert views of two lecturers from a local private college were elicited. Both experts had 15 years of teaching experience in English teaching courses. The two main aspects that were discussed with them were face validity and content validity. Both experts agreed on the qualification of the instrument to measure Student Achievement Goal Orientation, which confirmed the face validity. The suitability of the items for each construct (content validity) was also observed regarding the adequacy of items, words, and terms selection and the language used. The review process confirmed face and content validity, with only minor recommendations given for refinement. Based on the discussion and review results, one of the main refinements was to separate sentences that used the sequence connector "or" into three different items, as shown in Table 3. This was done because one of the characteristics of a good item is to avoid using connectors "or" because it causes confusion for the respondent to respond to the item (Chua, 2006). Furthermore, when students were asked about their views on a particular item, some of them were confused and thus gave their responses without considering the last two parties (friends or teacher), the first two parties (family or friends), or just thinking of their friends as persons who surround them in the English class. This was supported when running the Rasch analysis; the item "*I want to do my best in Mathematics class to show my ability to my friends.*" satisfied all the psychometric properties, while the other two were eliminated.

Table 2. Refinement of Item

Original Version of Item	Refinement of Item
I want to do well in English class to show my ability to my family, friends, or teacher.	- I want to do well in English class to show my ability to my family. - I want to do well in English class to show my ability to my friends. - I want to do well in English class to show my ability to my teacher.

7.3. Testing of the Interim Version of the Item

After getting the student responses and expert review, the interim version of the questionnaire consists of 20 items: six items for Mastery Orientation, eight for Performance-Approach Orientation, and six for Performance-Avoidance Orientation. This set of the interim version of the item was then analyzed by applying the Rasch Measurement Model.

7.4. Summary Statistics

The results showed that Cronbach's Alpha Coefficient was 0.86, indicating the instrument's high reliability (Gay *et al.*, 2009). It is an accepted value that allows the use of the instrument for further analysis (Chua, 2006). Besides that, the reliability coefficient for a person was 0.83, while the reliability coefficient for the items was excellent, which was 0.95 (Azrilah, 2011). The exemplary reliability indicates the sufficiency of items in the instrument and person range who were involved in the study.

Table 3. Summary Statistic for Person

	Raw score	Count	Measure	Model error	Outfit			
					MNSQ	ZSTD	MNSQ	ZSTD
Mean	40.1	13.0	1.50	.50	1.00	.0	1.00	.0
SD	5.5	.0	1.33	.10	.47	1.2	.48	1.2
MAX	51.0	51.0	5.25	1.05	2.82	3.2	2.70	3.1
MIN	24.0	13.0	-1.64	.41	.23	-2.8	.22	-2.8
Real RMSE	.55	ADJ.SD 1.21	Separation 2.18		Person Reliability			
Model RMSE	.51	ADJ.SD 1.23	Separation 2.40		Person Reliability			
Cronbach's Alpha	Cronbach's Alpha (KR-20) Person Raw Score Reliability = .86							

The instrument has a low measurement model error (+/- 0.50), moderate person separation (2.18), and excellent item separation (4.60). Lastly, the value of infitMNSQ and Z-Standard for the item (1.00, 0.00) and person

(1.00, 0.00) were both ideal (1, 0), indicating the instrument measures what it is supposed to measure (goodness-of-fit) (Saidudin, 2011). Tables 3,4 and 5 below show the summary statistics of the results.

Table 4. Summary Statistic for Item

	Raw score	Count	Measure	Model error	Outfit			
					MNSQ	ZSTD	MNSQ	ZSTD
Mean	339.2	110.0	.00	.17	1.00	.0	1.00	.0
SD	29.6	.0	.81	.01	.13	1.0	.15	1.0
MAX	384.0	110.0	1.20	.19	1.18	1.2	1.38	2.2
MIN	293.0	110.0	-1.32	.15	.72	-2.3	.74	-2.1
Real RMSE	.17	ADJ.SD .79	Separation 4.60			Person Reliability .95		
Model RMSE	.17	ADJ.SD .79	Separation 4.74			Person Reliability .96		

Table 5. Reliability of Constructs

Construct	Cronbach Alpha Coefficient	Level
Mastery Goal Orientation	0.83	Good
Performance-Approach Orientation	0.78	Moderate
Performance-Avoidance Orientation	0.95	Excellent
All Item	0.95	Excellent

7.5. Item Fitting

The purpose of item fitting analysis is to identify misfit items (outliers). In Rasch's analysis, the first four criteria, as shown in Table 6, may be fulfilled to clarify a particular item as an outlier and can be eliminated.

Table 6. Criteria for Item Fitting Test

No.	Criteria	Value/Range
1	Pt-Measurement Correlation	Positive (0.32 to 0.85)
2	Outfit Mean Square (MNSQ)	$0.5 < \text{MNSQ} < 1.5$
3	Outfit Z-Standard (Z-STD)	$-2 < \text{Z-STD} < +2$
4	Infit Mean Square	Must be less than the sum of the Mean and Standard Deviation
5	Item Measurement Value for Same Construct	Must be a Different Value

The result for the last iteration shows that all the items have a positive point-measure correlation range from 0.48 to 0.66, which satisfied the first criteria, and thus, all the items were considered fit items. Besides the first four criteria, the value of item measurement for the same construct must also be observed. If the value is the same, it indicates that the respondent views both

items as measuring the same thing (Saidfudin, 2011); hence, one of the items should be deleted. In considering which item should be kept and to maintain construct validity, the item with an MNSQ value near one and Z-Std near zero is said to have better fitting (Saidfudin, 2011). As shown in Table 7 (Item 5 and Item 20) and Table 8 (Item 6 and Item 9), the items have the same logit values, which were -0.23 and -0.30 respectively. However, since both items were not located in the same construct, no elimination of items was needed.

Table 7. Analysis of Item Fitting (1st Iteration)

Entry Num.	Raw score	Count	Measure	Model SE	INFIT		OUTFIT		PIME A CORR.	EXACT OBS	Item
					MN	ZS	MN	ZS			
					SQ	TD	SQ	TD			
5	386	121	-.23	-15	.78	-1.8	.83	-1.3	.56	67.8	PE2
20	386	121	-.23	-15	1.19	1.4	1.12	.9	.53	58.7	M6
10	437	121	-1.60	-18	1.28	1.9	1.57	2.5	.26	62.8	M3
Mean	372.9	121.0	.00	.15	1.01	.0	1.02	.0		60.0	
SD	32.8	.0	.73	.01	.16	1.2	.19	1.2		4.5	

Table 8. Analysis of Item Fitting (Last Iteration)

Entry Num.	Raw score	Count	Measure	Model SE	INFIT		OUTFIT		PIME A CORR.	EXACT OBS%	Item
					MN	ZS	MN	ZS			
					SQ	TD	SQ	TD			
7	293	110	1.20	-15	.78	2.3	.74	-2.1	.65	57.4	PE5
10	298	110	1.8	-15	.72	.2	1.03	.21	.63	58.5	M5
12	303	110	.97	-15	1.03	1.9	1.11	.91	.58	58.8	PE6
11	312	110	.75	-16	1.14	1.1	1.14	1.1	.63	59.2	PD8
6	330	110	.30	-16	1.08	.6	1.02	.21	.57	61.0	PE4
9	345	110	-.10	-16	1.05	.4	.92	1.5	.66	61.0	M4
4	345	110	-.30	-17	.94	-.4	.98	.01	.60	62.5	PD4
2	352	110	-.30	-17	.99	-.1	.87	.08	.61	62.7	PE2
13	357	110	-.45	-17	.83	1.3	1.04	.03	.60	63.8	M6
3	361	110	-.57	-17	1.14	1.0	1.38	2.1	.48	64.2	PD3
5	363	110	-.63	-18	1.18	1.0	.86	.91	.53	64.6	M2
1	381	110	-1.22	-19	.86	1.0	.99	.51	.54	66.9	PD2
8	384	110	-1.32	-19	1.00	.8	.90	.01	.52	67.6	PD5
Mean	372.9	121.0	.00	.15	1.01	.0	1.02	.0		60.0	
SD	32.8	.0	.73	.01	.16	1.2	.19	1.2		4.5	

7.6. Person Fitting

The same procedure as item fitting analysis was taken in considering the misfit person. As shown in Table 9, five misfit persons were detected (33, 34, 52, 118 and 122). The correlation value, outfit MNSQ, Outfit Z-Std, and Infit MNSQ, were out of the accepted value and range. Therefore, these five persons were eliminated and excluded in the subsequence iteration.

Table 9. Analysis of Person Fitting

Entry Num.	Raw score	Count	Measure	Model SE	INFIT		OUTFIT		PIMEA CORR.	EXACT OBS%	Match EXP%
					MN	ZS	MN	ZS			
					SQ	TD	SQ	TD			
34	70	20	2.36	1.73	1.73	2.1	1.75	2.1	.26	55.0	4244434 4443344 344224
53	69	20	2.19	3.91	3.91	5.7	5.44	5.7	-.11	45.0	4444444 1413144 434444
122	60	20	.96	2.01	2.1	2.6	1.94	2.6	1.09	40.0	3243333 3234341 442432
118	59	20	.84	1.72	1.72	2.0	1.70	2.0	.20	25.0	2334433 2234242 442422
33	51	20	.02	1.63	1.63	1.9	1.69	1.9	.25	40.0	4123322 1332244 323313
MEAN	61.0 8.02	20.0 .0	1.38 1.28	.40 .20	1.00 .49	-.1 1.5	1.2 .58	-.1 1.5	60.0 14.9	58.5 7.4	

7.7. Unidimensionality

The unidimensionality test was conducted in this study to ensure that the instrument measures specific objectives (Saidfudin, 2011), in this case, students' achievement goal orientation in mathematics. The analysis involved Principal Component Analysis (PCA), which looked at how much the instrument's variance was for measuring and what was supposed to be measured. In PCA, the two main aspects to be highlighted were the value of variance explained by measure and unexplained variance first contrast. The value for the variance explained by measures shown in Table 10 was 56.8%, which is very close to the expected model value (56.6%). This value satisfied the minimum requirement for unidimensional and passed the cut low point of Rasch, which is 40% (Saidfudin, 2011). Furthermore, the value for unexplained variance in the first contrast was 5.9%, which is good (Fisher, 2007).

Table 10. Principal Component Analysis

	Empirical		Modeled	
Total variance in observations	30.1	100.0%	100.0%	100.0%
Variance explained by measures	17.1	56.8%	56.6%	56.6%
Unexplained variance (total)	13.0	43.2%	100.0%	43.4%
Unexplained variance in first contrast	1.8	5.9%	13.7%	

The local dependence test for the most considerable Standardised Residual Correlation was then conducted to see the instrument's inter-

correlation. The requirement to be satisfied was that the correlation coefficient must not exceed 0.7, meaning that the item should have a moderate correlation coefficient with other things. As shown in Table 11, the correlation coefficient was 0.21 to 0.37, which satisfied the condition and indicated the independence of the items (Saidfudin, 2011).

Table 11. Local Dependent Test

Largest	Standardised	Residual	Correlations
	Residual	Entry	Entry
	Correln	Number ITe	Number ITe
	-.37	6PE4	11PD8
	-.29	-4PD4	10M5
	-.28	5M2	10M5
	-.27	1PD2	7PE5
	-.27	7PE5	9M4
	-.23	5M2	11PD8
	-.22	7PE5	13M6
	-.22	8PD2	12PE6
	-.21	3PD3	13M6
	-.21	1PD2	12PE6

7.8. Differential Item Functioning

The purpose of running the Differential Item Functioning Test is to ensure that no biased item exists. Criteria that should be satisfied are i) the value for the difference measure must be less than 0.5 and ii) the value for difference-t must be in the range of $-2 < \text{difference-t} < 2$. Items will be deleted if both conditions are not satisfied. As shown in Table 12, Item 1 was eliminated since it violated the condition.

Table 12. Differential Item Functioning Analysis

Person	Observations		Baseline		DIF		DIFDIFDIFDIF			Item
Class	Count	Avr.	Expect number	Measur name	Score	Measure	Size	S.E	t	Name
2	17	1.00	1.98	-.48	-.98	-1.54	2.02	.34	5.92	10001
3	53	2.00	2.15	-.48	-.15	.10	.38	.21	1.77	10001
4	53	3.00	2.53	-.48	.47	-5.62	-5.14	1.81	2.85	10001
2	17	2.24	2.07	-.70	.16	-1.12	-.42	.40	1.06	10002
3	53	2.25	2.23	-.70	.01	-.73	-.03	.23	.14	10002
4	17	2.53	2.59	-.70	-.06	-.06	.24	.26	.90	10002
2	53	1.59	1.34	.87	.24	.24	-.49	.35	1.40	10003
3	53	1.57	1.56	.87	.01	.01	-.02	.20	.10	10003
4	17	2.00	2.09	.87	-.09	-.09	-.22	.22	-1.2	10003

7.9. Rating Scale Validation

The research instrument used the 4-Point Likert Scale as the rating scale. Rating scale validation was run to determine the appropriateness of the number of response categories. Two aspects were considered in the validation process: value for observed average and structure calibration. Tables 13 and 14 show the rating scale validation analysis for the first and last iteration, respectively, while Figure 2 shows the items' response distribution. Value in the observed average column shows the increment from -0.64 to 2.85. This indicates that the response pattern was consistent, and the values in the structure calibration inform about the transition in choosing one scale to another scale. The value should be greater than 1.4 and not more than five (Saidudin, 2011). According to Azrilah (2011), if the value is less than the minimum logit, then the scale should be combined (*collapse*), but if the value is more significant than the maximum logit, then the scale should be separated (*split*).

Table 13. Rating Scale Analysis (1st Iteration)

Category Label	Score	Observed Count %	Obsvd Average	Sample Expect	Infit MNSQ	Outfit MNSQ	Struct. Calib.	Diff. CLB
1	1	83	-.28	-.40	1.08	1.23	Non	0.00
2	2	409	.24	.24	1.02	1.02	-.59	1.59
3	3	1155	1.08	1.10	.96	.96	-.39	1.30
4	4	773	2.35	2.32	.96	.97	2.07	2.46

As shown in Table 14, only some of the different values for structure calibration satisfied the requirement, but it was met at the last iteration. Hence, the rating scale need not be collapsed or split and remain intact.

Table 14. Rating Scale Analysis (Last 4th Iteration)

Category Label	Score	Observed Count %	Obsvd Average	Sample Expect	InFit MNSQ	OutFit MNSQ	Struct. Calib.	Diff. CLB
1	1	43	-.28	-.40	1.11	1.12	Non	0.00
2	2	234	.24	.24	1.04	1.05	-2.06	2.06
3	3	714	1.08	1.10	.98	.95	-.44	1.62
4	4	439	2.35	2.32	.94	.96	2.49	2.93

7.10. Item-Person Mapping

To confirm the construct validity of the items, we looked at the Item-Person Mapping. It shows the difficulty order of the items and the ability order of the person. The item difficulty order must be in place to ensure that the instrument construct is in order. Since there is no item in the same construct in all iterations with the same measurement value, the order of all items was in place. The summary of the psychometric analysis of the Rasch Measurement Model of the instrument is as follows.

Table 15. Summary of Analysis

No.	Aspects	Value	Description
1	Cronbach Alpha Coefficient	0.86	Accepted
2	Item Reliability Coefficient for the Construct of Mastery Goal Orientation.	0.83	Good
3	Item Reliability Coefficient for the construction of Performance-Approach Goal Orientation	0.78	Moderate
4	Item Reliability Coefficient for the Construct of Performance-Avoidance Orientation	0.95	Excellent
5	Item Reliability Coefficient for All Items	0.95	Excellent
6	Person Reliability Coefficient	0.83	Good
7	Item Separation Value	4.60	Very Good
8	Infit MNSQ value for item (ideal=1)	1	Ideal
9	Infit MNSQ value for person (ideal = 1)	1	Ideal
10	Z-STD value for item (ideal = 0)	0	Ideal
11	Z-STD value for person (ideal = 0)	0	Ideal
12	Variance Explained by Measures	56.8	-satisfied the minimum requirement of unidimensional -satisfied cut-low point of Rasch (405)
13	Local Dependence Test	< 0.7	All items are independent
14	Observed Average	Increase in Sequence	Consistency response
15	Structure Calibration	1.4 < Structure Calibration < 5	Rating scale maintained

8. DISCUSSION

The main aim of this paper was to test the dimensions of achievement goal orientation in the context of language education in Pakistan. Several iterations were conducted until there were no misfit items and misfit persons in producing a set of stable and valid instruments with a total of 13 items, as all the psychometric properties were satisfactory. The Rasch Measurement Model was applied to determine the reliability and validity of the instrument. The result confirmed the instrument's usability for measuring Student Achievement Goal Orientation in the Pakistani context, specifically for secondary school students. The aspects investigated were face validity, content validity, item reliability, person reliability, item fitting, person fitting, unidimensionality test, rating scale validation, and construct validity. The results of this study further verify the results of previous studies (Hoi and Mu, 2021) on the validation of achievement goal orientation in other cultural contexts. For example, Barkur, Govindan, and Kamath (2013) examined the relationship between academic achievement goal orientation and the performance of Malaysian students in

Indian medical schools. They used the confirmatory factor analysis technique to assess and validate the scale and found encouraging improvement in students' performance concerning the mastery goal approach.

Similarly, Hall, Hanna, and Hall (2015) studied the association between achievement goal orientation and academic performance among U.K. pharmacy students. They applied exploratory factor analysis and confirmatory factor analysis to validate the scale. Based on their assessment, they found that the mean score was for mastery approach orientation and concluded that goal orientation played a vital role in the academic performance of pharmacy students. Further evidence of construct validation of the instrument is provided in a study conducted by Midgley, Kaplan, Middleton, Maehr, Urdan, Anderman, and Roeser (1998) based on confirmatory factor analysis. They found good model fit and clear distinctions among all the items in the scale.

The present study found that all the items with a positive point-measure correlation ranging from 0.48 to 0.66 satisfied the first criterion. Thus, all the items were considered as fit items. This finding aligns with previous studies' results (Ningsih *et al.*, 2021). as reported from other contexts. For example, a study conducted by (Pastor *et al.*, 2007) provided further evidence for assessing achievement goal orientation among college students using multiple regression and cluster analysis. They found mixed results regarding the achievement-related outcomes of the students and recommended further testing of the scale. Based on these testing results, it is inferred that it is essential for effective learning and performance of language students to be sufficiently motivated. Researchers have already established that motivation is the foundation for developing them into independent learners as future language educators (Leeming and Haris, 2022; Gardner, 2014). Such learning would help the language students achieve high professional growth and development (Hoi, 2020). This study provided evidence that the achievement goal orientation scale can be used for the development of language students in the Pakistani context and for overcoming the problems faced by them in the context of language learning in Pakistan because the scale showed strong evidence of validity and reliability as shown in the analysis section above. Language teachers and experts may use the scale to improve students' performance and motivate them to learn a language.

9. CONCLUSION

The scale testing in this study revealed that the achievement goal orientation is highly reliable and valid in the context of English language

education in Pakistan. The analysis showed that all the scale parameters were within the threshold point. The reliability of the scale was much better than its previous validation evidence. The validation of the scale provides more opportunities for language instructors to improve achievement motivation among students before preparing them for learning. The scale may be used to assemble essential data regarding the issues and challenges of language learning and how to improve students' primary motivation for language learning.

The validation of the scale in the context of language learning plays a vital role in the academic performance improvement of language students in Pakistan. By applying this scale, the students and teachers may get more real chances for language learning motivation. The results of his research are essential because language educators must ensure that students are motivated to learn before designing learning activities in the context of a language classroom. This will enable them to produce the desired language performance among the students as they will feel encouraged and rewarded. This type of assessment may better prepare the students for lifelong learning.

This research suggests that the questionnaire be used to collect information about Achievement Goal Orientation in language subjects in other contexts. The results of this study may be tested in other fields to validate the psychometric features of the scale further. Lastly, as a recommendation, it is suggested that language researchers use the instrument to enhance the language learning abilities of students in schools. The findings of this study may also be tested with convergent validity in the future to investigate the similarities and differences between the instrument and other devices.

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Figure 2. Items Response Distribution

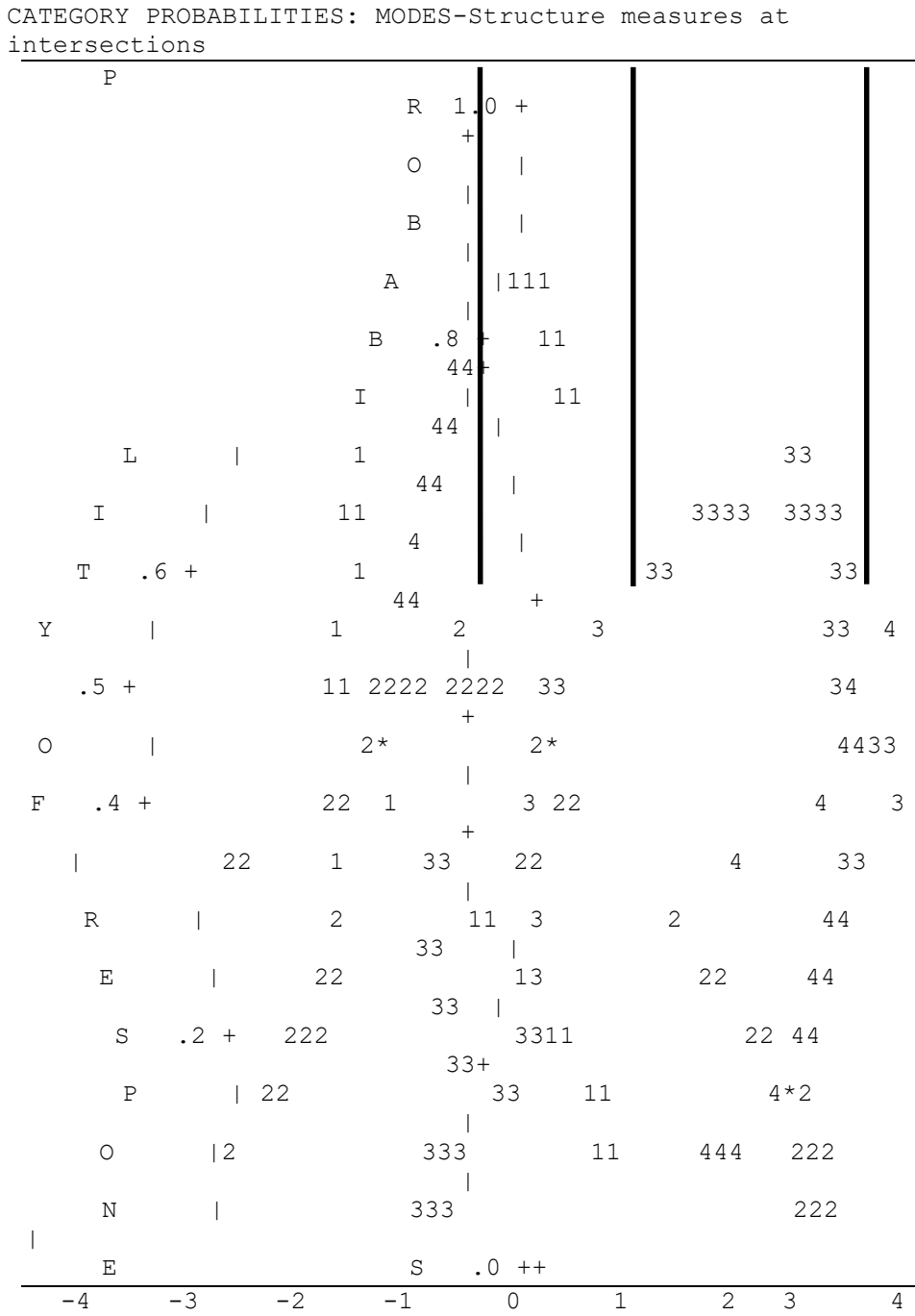
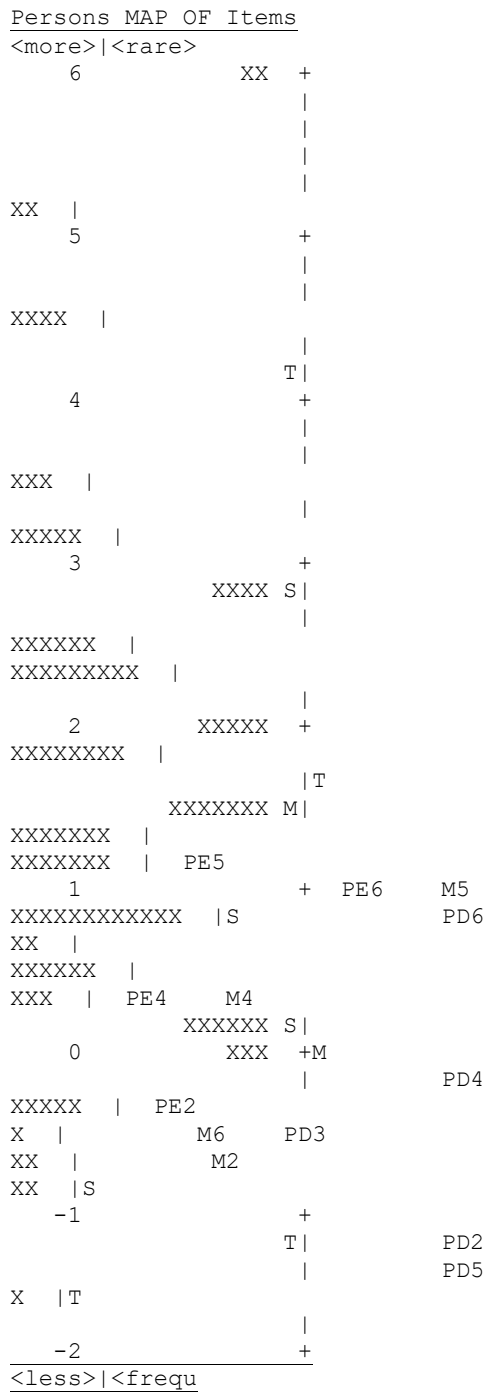


Figure 3. Item-Person Map



Psychological Issues of Domestic Workers: A Qualitative Investigation

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Abstract

The present study is a qualitative exploration of psychological problems faced by domestic workers in the Islamabad and Rawalpindi regions. The study was conducted with only female domestic workers, including both resident and non-resident workers with an age range from 18 years onwards and having work experience of more than one year. The study was carried out in two phases. In the first phase, six focus group discussions were carried out, while in the second phase, fifteen in-depth interviews were conducted to gain a deeper understanding of the psychological problems faced by domestic workers. The thematic analysis approach revealed ten themes, including depressive symptoms, anxiety symptoms, Stress, helplessness, anger, feelings of insecurity, guilt, feelings of inferiority, repressed and unfulfilled desires, and dissatisfaction with life circumstances. Resident domestic workers reported more psychological issues due to the nature of their workplace environment as compared to non-resident domestic workers. This further hurts their sense of self, physical and mental health, cognitions, relationship with others, and psychological well-being.

Keywords: Domestic Workers, Thematic Analysis, Psychological Issues, Pakistan, Qualitative Investigation.

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1. INTRODUCTION

Since the history of mankind, human beings have been involved in different professions to carry out their life activities. Other professions have different demands regarding education, skills, and training in specific fields. Some occupations are highly respected and valued in society, and those are highly paid professions, while some are considered low profile with less monetary benefits. People with higher education and expertise choose their

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relevant profession, while uneducated people with limited skills have limited opportunities. It has been observed that most people with little education and limited skills join the profession as domestic workers (Albin and Mantouvalou, 2012; Erdogdu and Toksoz, 2013).

Domestic workers are professionals of house-based tasks who work in others' houses as their occupation (I.L.O., 2013). The convention on domestic staff characterizes household laborers as individuals involved in activities like cleaning, cooking, servers, valets, head servants, laundresses, gardeners, gatekeepers, chauffeurs, drivers, babysitters, and so on (Lalani, 2011).

Broadly, domestic workers can be divided into two categories: resident workers (full-time services) and non-resident workers (task-specific). The 2014-2015 Labour Force Survey in Pakistan reported almost 0.464 million domestic workers, of which 0.1 million were resident house-based workers while 0.364 million were day- or task-specific (Wageindicator, 2018).

Domestic workers are considered of lower rank status and unrespectable in Pakistani society. The ratio of female house-based workers is far more than males. In Pakistan, it is estimated that almost 70 percent of females are part of the domestic worker profession (Ali, 2017). It was observed in our society that employer's behavior with domestic helpers was very precarious and abusive, occasionally reported in newspapers, and generally, it was hidden because of threats and disrespect from employers and society. The abuse can be of different kinds: verbal, physical, emotional, and psychological. Most of the reported cases from the Capital and Punjab province indicated that 90% of females were victims. The findings of a research report indicated the profession of domestic workers as one of the only occupations in which workers suffered from hazardous conditions such as physical harm and psychological abuse (IDWFED, 2014).

Psychological issues are described as the affected state of mind, recognized with the psychological and zealous condition of a person or a condition that leads to significant problems in an individual mood, thinking, and behavior (Psychological Issues, 2014).

Power imbalance, such as abusive relationships, bullying, and abuse subjecting, or exposing, towards employees at the workplace may result in psychological trauma, including anxiety, chronic depression, or post-traumatic stress disorder (Dutton *et al.*, 2000).

A study was conducted in Hong Kong among overseas domestic helpers to investigate their mental and physical health. Results showed the prevalence of psychological problems, including suicidal intention, situational Stress, and lack of interest in working (Chung and Mak, 2020).

Female domestic workers and migrants from Sri Lanka to the Middle East are highly vulnerable to adverse working or living conditions in destination countries. Data was attained through focus group discussions and in-depth interviews to explore their problems. Research findings indicate evidence of emotional abuse, sexual abuse, and depression among female workers due to their unhealthy work environment (Weeraratne, 2014).

It was widely recognized that women found it very difficult to report sexual harassment at workplaces and were forced to remain silent. This could be because women were often blamed for the harassment. The power dynamics between employers and employees and the fear of discrimination or dismissal keep them silent. Lack of awareness of laws, little confidence in complaint mechanisms, or stigma due to breach of confidentiality can also be responsible for the silence (Shrivastava, 2015). After a sexual assault, women may feel emotionally shocked or uncertain. A common reaction includes high absenteeism, low work performance, low job satisfaction, depression, and thoughts of suicide (Shahzad and Malik, 2014; Sarwari, 2020). Few domestic workers faced harassment at their workplace and complained to their supervisors, but no minor action was taken against the accused (IDWFED, 2014).

2. THE RATIONALE OF THE STUDY

The current Study is based explicitly on the objectives of identifying and investigating in-depth psychological issues of female domestic workers from Islamabad and Rawalpindi. It is essential to highlight that the literature sensitized the researcher to study the psychological issues of female domestic workers in Pakistan using scientific research methods. It has been observed that physical and mental torture of female domestic workers caused psychological problems among them. Domestic workers are suffering from many problems due to their unhealthy workplace environment, which makes their lives miserable (IDWFED, 2014). In Pakistan, around 47 cases of physical and psychological abuse against domestic workers were reported in the media from January 2010 to December 2014, while as many as 24 workers lost their lives from violence committed by their employers, and few of them were compelled to commit suicide (Khan, 2017). Initially, there was no specific law or any other facility for the fundamental basic rights of domestic workers in Pakistan (Wageindicator, 2018). That is the reason female domestic worker persistently face exploitation and dehumanization from their employers (Arijo, 2023). The present Study's foremost aim was to uncover domestic workers' sufferings. For

the present study, the researcher used qualitative research methodology to explore the psychological problems of female domestic workers. Although many standardized scales for the measurement of psychological problems are available, the researcher has conducted focus group discussions followed by in-depth interviews, keeping in mind that most of the workers are illiterate or have a low educational background.

The study findings would help increase public awareness about the sufferings of female domestic workers. The findings of the Study can also be helpful for the government in making policies and provisions of equivalent protection under labor laws for domestic workers. Imposing these strategies will also help in eradicating disregard for female domestic workers, which is directly linked to the rise of the status of women. This research study is highly contributive to society as this sector has mainly been ignored for scientific research. Numerous types of research have already been conducted on females, including nurses, students, bankers, and local, private, and multinational companies regarding their workplace environmental challenges. Although the research on these above sectors has been remarkably influential, there needs to be more research on crucial problems of domestic workers. It could serve as a source of worthy information about improving the workplace environment and accessibility of the basic rights for domestic workers. Hence, removing issues related to the domestic worker's workplace might improve their psychological and physical health and social life.

This Study is an addition to academic literature as it focuses on an in-depth exploration of specific psychological issues of domestic workers. Moreover, it provides differences in the experiences of two primary domestic workers (resident and non-resident) groups. However, these aspects of domestic workers were considered more than just in Pakistan. Therefore, it will help policymakers understand the mental state of domestic helpers and give knowledge to household employers while selecting them.

3. METHOD

3.1. Research Design and Sample

The researcher has chosen the qualitative method (Phenomenological Approach) for exploring the psychological problems of domestic workers. The researcher used a convenient and snowball sampling technique for conducting six focus group discussions and fifteen in-depth interviews with (7 residents and eight non-residents) female domestic workers. The study sample was

selected from the Islamabad and Rawalpindi regions, who were employed in any private household and were part of that job for the last year with an age range of 18 years and above.

3.2. Inclusion/ exclusion criteria

Only female domestic workers were included because the ratio of females in this profession is much higher than males. The sample was selected from the Islamabad and Rawalpindi regions with work experience of more than one year and an age range of 18 years and above. Female domestic workers with work experience of less than one year and below 18 years were also excluded.

3.3. Procedure

The present study was conducted in two phases. During phase I of the Study, six focus group discussions were conducted. For each focus group discussion, 6 to 8 domestic workers discussed their problems. The sample was selected from Rawalpindi and Islamabad regions. The duration of the discussion varied from group to group; however, the average time was one and a half hours for each discussion.

Focus group discussion is a planned series designed to perceive a defined area of interest in a permissive, non-threatening environment (Casey and Krueger, 2000). Six open-ended questions were asked during each focus group discussion to understand the problems female domestic workers face due to their workplace environment. The demographic sheet was designed to acquire personal information from the participants of focus group discussions. The demographic sheet included name, age, education, marital status, income, family system, family members, number of earners, number of houses where they work, number of houses from where they left their employment, timings of work, duration of work, accommodation category (resident or non-resident domestic workers). The saturation point was achieved after conducting six focus group discussions, and the researcher found no new ideas coming from participants' discussions. When a study delivers maximum information about a particular phenomenon, and no further analytical information emerges, it is said to have reached data saturation. At that stage, the researcher stopped collecting more data per Moser and Korstjens's guidelines (2018).

Data from the focused group discussions was transcribed into written form. The thematic analysis approach analyzed written data. The analysis followed these steps: that is, initial encounter of the researcher with the data,

(ii) identification of the themes, (iii) clustering of the themes, and (iv) synthesizing the codes into descriptions (Smith *et al.*, 1999). Seven themes regarding psychological issues of female domestic workers were extracted, including depressive symptoms, anxiety, Stress, sleep disturbances, anger, inferiority feeling, and helplessness. Based on these themes, an interview record sheet was developed to collect data for the primary Study.

During phase II (Main Study), based on finalized interview guidelines, fifteen in-depth interviews were conducted, and before conducting interviews, the researcher briefed the participants about the study objectives and assured them about the confidentiality of their information. After obtaining consent from participants, they were given a few necessary instructions. Interviews were conducted on an individual basis in a separate room and comfortable environment. Participants took a maximum of about one hour, and the average interview duration was about 30 to 40 minutes. Interviews were audio recorded after obtaining consent from the participants, and the interviewer also preserved the field notes during interviews and reviewed them one by one at the end. At the end of each interview, the participants were warmly thanked for their cooperation.

Considering field notes and audio recordings of the interviews, all the information gathered from study participants was transcribed on an answer record sheet, and later themes were extracted.

The A.P.A.'s research ethics guidelines have been considered in this Study. Before obtaining permission from the participants, they were informed of the Study's aim and purpose. Moreover, the interview was recorded using smartphone app recorders with the consent of the participants. In addition, they were assured about the confidentiality of their information, and the identification of the participants has been kept confidential in the current Study. The participants were also instructed to be able to withdraw from the research at any time without any hesitation.

4. RESULTS

Each interview was audio recorded and transcribed on a white page. Researchers first translated those verbatim interviews into the English language in regional and national languages to perform a thematic analysis. However, as English is not Pakistani's native language and the sample was illiterate, the researcher listened to all the recorded interviews individually to transcribe it in English. This methodology involves translation, as it is required in qualitative

studies if the target publication language differs from the data collected in another source language.

After that, we performed data analysis. The Study used a manual thematic analysis approach for importing, organizing, and exploring data for analysis. While conducting thematic analysis, the researcher followed six steps: familiarization, coding, generating themes, reviewing themes, defining, and naming themes, and writing up. Researchers carried out this data analysis process to ensure the rigor of qualitative interviews (Syed and Nelson, 2015).

A thematic analysis approach was used to analyze the data. Major and sub-themes were extracted by separating the repetitive and common themes. Thematic analysis is considered the most widely recognized form of analysis in qualitative *research* (Guest, MacQueen and Namey, 2012). Ten sub-themes emerged regarding the psychological issues of domestic workers, as listed in Figure I.

Figure I. On the continuum of themes, psychological issues emerged from in-depth interviews.



Table 1 indicates that the majority of the resident workers' age group was between 18 and 22 years old and mostly were able to read Quran-e-Pak, and all were unmarried. On the other hand, the average age group of non-resident workers was between 35 and 45 years; most were illiterate, and all were married.

Table 1. Frequency of age group, education, and marital status for both resident and non-resident female domestic workers (N=15)

Resident workers		Non-resident workers	
Demographic details	<i>f</i>	Demographic details	<i>f</i>
Age group		Age group	
18-22	4	25-35	3
22-26	2	35-45	4
26-30	1	45-55	1
Education		Education	
Quran-e-Pak	3	Quran-e-Pak	2
Primary	1	Illiterate	6
3 rd Grade	1		
2 nd Grade	2		
Marital status		Marital status	
Unmarried	7	Married	7
		Widow	1

Table 2. Frequency of Psychological Issues for both resident and non-resident female Domestic workers (N=15)

Resident workers		Non-Resident workers	
Issues	<i>f</i>	Issues	<i>f</i>
Depressive symptoms	7	Depressive symptoms	5
Anxiety Symptoms	7	Anxiety Symptoms	3
Stress	5	Stress	5
Anger	5	Anger	4
Feeling of insecurity	7	Feeling of insecurity	3
Feeling of inferiority	6	Feeling of inferiority	3
Guilt feelings	6	Guilt feelings	2
Helplessness	6	Helplessness	3
Repressed desires	5	Repressed desires	8
Dissatisfaction with life circumstances	7	Dissatisfaction with life circumstances	7

Results in Table 2 presented the prevalence of psychological issues among both resident and non-resident domestic workers; however, table values indicated that resident domestic workers have high levels of depression, anxiety, anger symptoms, feelings of insecurity, feelings of inferiority, guilt, and helplessness as compared to non-resident domestic workers.

5. DISCUSSION

The present study explores the psychological issues of female domestic workers from the Islamabad and Rawalpindi regions. The demographic sheet collected information about each participant's details, including their age, education, and marital status. Overall, domestic workers' age range was from 18 to 55 years, including most of the resident domestic worker's age range between 18-22 years, and most non-resident domestic workers' age ranged from 35-45 years, as shown in Table I. An earlier study reported that the average age for female domestic workers was between 19 and 45 (Nazir, 2011). Female domestic workers were illiterate or had primary education; it is primarily evident that women with low education levels or moving from rural parts of the country to cities because of poverty and had no chance for any other employment joined the profession of domestic workers (Erdogdu and Toksoz, 2013).

Regarding the marital status of female domestic workers, in the present study, all resident domestic workers were unmarried, and non-resident workers were married, as indicated in Table I. These results align with already conducted research, which indicated that ninety percent of resident domestic workers were unmarried. However, after marriage, to support their family economically, they start casual or part-time work and spare extra time for their spouse and children (Mubugua, 2014).

From in-depth interviews with domestic workers using thematic analysis, ten sub-themes of psychological issues emerged, i.e., depressive symptoms, anxiety symptoms, Stress, helplessness, anger, feelings of insecurity, guilt, feelings of inferiority, repressed and unfulfilled desires, and dissatisfaction with life circumstances emerged as shown in Figure I. Approximately 72% of female household servants faced psychological maltreatment at the workplace by their employers (Lalaani, 2011). Another study showed that 54% of domestic workers had poor psychological health (Anjara *et al.*, 2017).

Results of the present study showed that resident domestic workers faced more psychological issues as compared to non-resident domestic workers, as indicated in Table II, because resident workers spent 24 hours each day at their workplace and were physically, verbally, and sexually abused, which leads them toward mental health-related problems. Studies indicated that more than two out of every ten resident domestic workers are categorized as having poor mental health (Mubugua, 2014).

The resident domestic worker reported their depressive symptoms as, R.D.W. 2: "She used to beat me a lot, cut my hair and left me bald. I missed my parents too much. They love me a lot. I do not want to do any work. I am broken from inside and even sometimes become too disturbed and want to eat poison".

An investigation revealed that because of abuse and the way that domestic labourers regularly feel as though they are bad enough or inhuman, they may lose confidence and self-esteem, and this may negatively affect their psychological wellness (Tolla, 2013). In the current study, resident domestic workers reported more depressive symptoms (crying spells, fatigue, sadness, suicidal ideation, poor concentration, and low self-esteem) than resident domestic workers, as shown in Table.

Non-Resident female domestic worker explained Stress as, NRDW 4: "My husband demands money even when I have nothing to give him. When I take leave from work because of children or personal sickness, she (employer) pressurizes me, then my mind begins to burst, and at that time I become exhausted".

NRDW 4: At their last workplace, where she quit doing her job, she reported her experience as, "I was in high fever and took two days to leave from work, as I entered in the employer's house, her husband misbehaves with me and starts shouting on me, and she remains silent. When I tried to say something, that man started beating me with shoes. It was a very miserable day in my life. That day, I cried so much and felt stressed because I did not have money".

Consistent with present findings that domestic workers were significantly associated with Stress, they became more isolated, which leads to poor quality of life (Sales and Santana, 2003). Due to the nature of their duties, domestic workers indicated Stress related to their occupational and personal life.

Domestic workers presented anxiety complaints when investigated, including high palpitations, apprehension, and feeling of going to die (Sales and Santana, 2003). In the current study, resident domestic workers indicated more anxiety symptoms (irritability, restlessness, choking, sweetening, and trembling) as compared to non-resident domestic workers, as shown in Table II.

As one of the resident domestic workers reported their anxiety symptoms as, R.D.W. 3: "When she (employer) scolds me due to stress, my body starts shaking, and the feeling of choking and sweetening continues for almost half an hour."

In the current study, resident domestic workers reported more insecurity at the workplace than non-resident workers, as exhibited in Table II, because they live at their workplace full-time and remain in contact with their employers all the time. Many of the resident respondents reported insecurity of being harassed physically and sexually.

Resident female domestic workers explained feelings of insecurity as, R.D.W. 4: "In the beginning, I felt very scared; I was very scared of going to others' homes and their bedrooms, and incidents that happened with other people came into my mind. I was afraid of their family's boys and men. I still feel so insecure that they may blame me for the robbery and may hand me over to the police".

NRDW 6: "It happened many times when I feared losing my job and worried about my household expenditures and how it would be fulfilled. Previously where I worked, there I worked for the whole day and bore rape at night.... now all the time I felt afraid".

Resident domestic workers told their experiences of inferiority feelings as, R.D.W. 2: "Food is given in separate pots. Everyone hates me; the pots I eat are stinky and ugly; it seems I have no right to live in this world. I cannot use the washroom when needed".

The findings of the current Study revealed that domestic workers felt aggressive when they were harassed, controlled, and compelled to work again and again. Domestic workers became angry when their employers used foul language and angry words, hit them, or asked them to do some extra work (H.R.W., 2006).

Non-resident domestic workers said that when they felt aggressive, NRDW 5: "When I take leave, she (employer) usually becomes aggressive, which makes me angry because she does not understand my problems; at that time, I want to leave that workplace. Sometimes, because of annoyance, I do not work properly, give them dodge, and sometimes start self-talking".

In the present study, resident domestic workers faced helplessness due to the workplace environment, whereas non-resident domestic workers reported their helplessness due to age factors or family problems. Domestic workers suffered from helplessness in which they were bound to work and were not given any rights, and always blamed for robbery if anything was lost (H.R.W., 2006). Table II shows that resident domestic workers felt more helpless due to their workplace environment than non-resident domestic workers.

Resident domestic workers reported helplessness as, R.D.W. 5: "I could not inform any other person about my situation that how they are being

cruel with me and forced me to work; if I ever speak about leaving that work (Job), (Male employer) threaten me and my family, that they would hand us over to the police."

In the present study, 14 out of 15 respondents reported dissatisfaction with their lives. They were tired of their lives and had no specific aim in their lives because of hopelessness and lack of support from their family as well as their employers. A study found that around 72% of domestic workers were unsatisfied with their lives, and just 28% were happy with their present life (Augustine and Singh, 2016).

6. CONCLUSION

The primary objective of the present study was to find out the psychological issues of domestic workers due to their workplace environment. The research was conducted in two phases; during the first phase of the Study, focused group discussions were conducted, while the second phase dealt with in-depth interviews with resident and non-resident domestic workers to understand their psychological issues.

In the present study, research data indicated the prevalence of different psychological problems among female domestic workers, including depressive symptoms, anxiety symptoms, Stress, anger, feelings of inferiority, and guilt feelings. It was found that resident domestic workers suffered from more psychological issues as compared to non-resident workers because resident workers spend more time and face more abuse at their workplace than non-resident workers. This indicated that domestic workers have poor mental health because of their unhealthy workplace environment, so it is necessary to focus and work further on these issues as it is a primary informal sector of our society.

7. LIMITATIONS, SUGGESTIONS, AND IMPLICATIONS OF THE STUDY

The present study's data was collected only from twin cities Islamabad and Rawalpindi, and female domestic workers were selected as the study sample. Further studies can also be conducted in other areas of Pakistan, and male domestic workers can be added as a study sample. One of the most critical limitations of the present study was that the sample needed to be more literate, and the researcher needed help in getting irrelevant responses from the participants while conducting interviews with them. The present study took a long time to complete because of its qualitative nature and the need for more interest and awareness among these domestic workers. Future studies can be

planned to get more scientific information in Study. It is essential to organize seminars or awareness programs. Moreover, N.G.O.s can also play a more significant role by identifying the psychological issues and sufferings of domestic workers and by raising a voice for their rights. The government should provide referrals for health care and counseling centers to rehabilitate domestic workers, and laws should be formed to provide domestic workers with rights.

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The Lived Experiences of Burnout in Clinical Psychologists in Pakistan: A Phenomenological Study

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Abstract

Clinical psychologists are compelled to encounter the challenging conditions of psychologically ill clients in their exacerbating journey. They must bear the emotional burden of apprehension, worry, overtiredness, and mental fatigue. The adverse lived experiences of clinical sessions, psychotherapy, and counseling lead to work-related mental stress and emotional exhaustion. Consequently, burnout has been one of the main precursors that mental health professionals are constantly dealing with. The research study aims to explore the lived experiences of burnout among clinical psychologists and identify the coping strategies used by these clinical psychologists in Pakistan. The study uses the qualitative phenomenology method to evaluate the respondents' experiences. The purposive sampling technique was used to conduct semi-structured interviews with six clinical psychologists. Using interpretative phenomenological analysis, the four themes of lived experiences of burnout and the five themes of coping strategies emerged. Results suggest that clinical psychologists have encountered burnout mainly due to workplace conditions, caregivers' attitudes, a state of helplessness, and societal stereotypes. They cope with burnout because of family-work balance, a support system, religious affiliation, and determined personality traits. The findings contribute new aspects of knowledge about the burnout phenomenon and help shape mental healthcare policies. There remains a need for further rigorous investigation of burnout to establish a formal policy for the mental health of clinical psychologists.

Keywords: Lived Experiences, Burnout, Clinical Psychologists, Coping Strategies, Phenomenology, Interpretative Phenomenological Analysis

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1. INTRODUCTION

American Psychological Association (n.d.) describes clinical psychologists as mental health professionals trained in the techniques for

diagnosing and treating various psychological disorders. They serve as consultants to other medical, legal, social work, and community relations professionals. They are the leading providers of mental and behavioral health care services that primarily diagnose and treat mental and substance abuse disorders in a wide range of treatment facilities.

Freudenberger (1974) initially defined "burnout" as wearing out, failing, or becoming exhausted due to demanding energy and resources. The World Health Organization's (2019) International Statistical Classification of Diseases and Related Health Problems (11th ed., ICD-11) does not classify burnout as an illness; it is a syndrome caused by chronic workplace stress and unmanaged mental pressure. It is conceptualized in three dimensions: energy depletion or emotional exhaustion, feelings of cynicism toward the job, and decreased professional efficacy. Similarly, the American Psychiatric Association's (2013) Diagnostic and Statistical Manual of Mental Disorders (5th ed., DSM-5) also does not consider burnout a distinct mental disorder.

Burnout is a psychological syndrome that arises from interpersonal workplace stress. Initially, research on burnout came from clinical and social psychology, which relied on psychological disorders and interpersonal relations. Succeeding industrial and organizational psychology focuses on work attitudes and job stress. Hence, the dimension of burnout has expanded (Maslach and Leiter, 2016). Additionally, burnout is a syndrome of emotional exhaustion and cynicism in individuals who work with ordinary people. Emotional exhaustion consists of a lack of energy, fatigue, emotional depletion, and debilitation. Cynicism includes feelings of depersonalization, irritability, and withdrawal. Further, inefficacy comprises low morale, a lack of productivity, dissatisfied accomplishments, and an inability to cope with one's work (Maslach and Jackson, 1981).

Most theoretical perspectives on burnout have considered the critical dimensions of exhaustion, which refer to the depletion of emotional and physical resources, primary stress, and a feeling of overextension. Moreover, exhaustion refers to the most reported component of the syndrome and the primary criterion of varied models (Maslach and Leiter, 2017). Burnout leads to long-term chronic stress (Maslach and Jackson, 1981), work-related mental health impairment (Awa *et al.*, 2010), anxiety and depression (Morse *et al.*, 2012), personal distress (Freudenberger, 1974), mental health issues (Maslach *et al.*, 2001), manifesting physical symptoms with social withdrawal (Gorgievski and Hobfoll, 2008), absenteeism (Ahola *et al.*, 2008), and reduced efficiency (Taris, 2006).

A recent study by Warlick et al. (2021) analyzed the prevalence of burnout by comparing graduate-level and professional clinicians. The findings showed that all mental health clinicians are much more at risk for personal burnout. The prevalent percentages showed 48.9% of graduate students and 39.5% of mental health clinicians reporting personal burnout. Furthermore, female clinicians were found to be at higher risk than male clinicians. Studies estimate that between 21 percent and 61 percent of mental health practitioners experience signs of burnout (Morse *et al.*, 2012). Workplace climate, caseload size, and severity of client symptoms are all linked to burnout (Acker, 2011; Craig and Sprang, 2010; Thompson *et al.*, 2014). In comparison, lower caseloads, less paperwork, and flexibility at work are associated with lower levels of burnout (Lent and Schwartz, 2012). Hence, burnout negatively affects practitioners and their clients (Kim *et al.*, 2011).

2. LITERATURE REVIEW

Sciberras and Pilkington (2018) explored the lived experiences of psychologists working in mental health services in Malta. The study interviewed seven psychologists to investigate the meaning psychologists have with their work and the implications of working in mental health services. Interpretative phenomenological analysis revealed the common themes of client work as a source of satisfaction or stress, a psychologist in the multidisciplinary team, and an emphasis on self. Further, the work setting contributes significantly to the quality of the participant's experience. Negative emotions due to the system are more stressful than client work. The absence of power, failing control, and disagreeable factors contribute to distressing jobs. However, personal coping strategies help with survival in such settings.

Hammond et al. (2018) also analyzed burnout experiences among Australian solo practicing psychologists. It selected six clinical psychologists through criterion-based sampling, and their interviews were assessed using thematic analysis. The themes found that burnout is prevalent and an enduring symptom among clinical psychologists. Knowledge of risk factors and years of job experience were protective against burnout. Life stressors and excessive workload act as precursors to burnout.

Furthermore, Angelika and Rzeszutek (2022) critically performed a systematic review using the PRISMA framework. Thirty-eight studies examined burnout among psychotherapists, while the other 14 studied psychological well-being in this sample. Burnout and well-being among psychotherapists are related to sociodemographic (e.g., age, gender),

intrapersonal (e.g., coping, personality), and work-related characteristics, including work settings and professional support in this profession (e.g., supervision or personal therapy).

Another study by Ackerley et al. (1988) determined the level of burnout among 562 licensed doctoral-level practicing psychologists who were engaged in psychotherapy. They experienced a lack of control and overcommitment in a therapeutic setting. The Maslach Burnout Inventory (MBI) and the Psychologist's Burnout Inventory (PBI) were administered. The responses revealed that more than a third of the sample reported high levels of both burnout dimensions: emotional exhaustion and depersonalization. However, all three subscales of the MBI were significantly higher for licensed psychologists.

Farber and Heifetz (1982) conducted a qualitative study to explore the experiences of therapeutic practice among 60 psychotherapists. Two hours of semi-structured interviews were conducted. The findings revealed that therapeutic relationships are achieved through professional satisfaction. Further, burnout results from inattentiveness, irresponsibility, overburden, isolation, and discouragement in a therapeutic relationship. Appreciation and rewarding behavior in a support system are required to avoid burnout.

Huebner (1992) studied 139 school psychologists to explore burnout in terms of job satisfaction, ideal caseloads, and intent to leave the job. The MBI, School Psychologists' Stress Inventory (SPSI), and satisfaction questionnaire were administered. The findings suggested that burnout frequently occurs with feelings of emotional exhaustion and reduced personal accomplishments. The study also revealed that the sample's burnout coping methods were insufficient to cope with the situation.

Huebner (1993) investigated the levels of burnout in a heterogeneous sample of school psychologists in America. The sample responded to the MBI and a demographic and job function questionnaire. The results show that 25 percent of the sample reported high levels of emotional exhaustion, 3 percent reported high levels of depersonalization, and 12 percent reported low levels of personal accomplishment. A positive correlation was found between intervention-related competencies and personal achievements. Another study on school psychologists was conducted by Sandoval (1993) to assess the relationship between a personality trait and burnout. Personality characteristics were measured with the California Psychological Inventory (CPI), and burnout was measured with the MBI among 100 school psychologists. The findings suggest that well-integrated personalities are at a lower risk of burnout than others.

Maslach and Jackson (1982) analyzed coping with burnout to discover how people deal efficiently with coping strategies. The social psychological analysis of burnout among health professionals was assessed on the MBI and relevant resource management variables. The study indicated that various coping strategies include individual techniques at the social and institutional levels. The most common way to reduce burnout is to avoid people, which is practically impossible because burnout involves practitioners engaging in activities. However, it is noted that some personality traits may be responsible for feelings of burnout.

Furthermore, Benzur and Michael (2007) compared stress appraisals, coping strategies, social resources, and burnout among social workers, psychologists, and nurses to assess the effectiveness of appraisals and support in decreasing burnout. The sample consisted of 249 female professionals aged 25–61 years. The appraisal scales, COPE scale, Multidimensional Scale of Perceived Social Support (MSPSS), and burnout scale were used. The results indicated that control over the job was directly related to all burnout outcomes and caused less exhaustion, depersonalization, and personal accomplishment. The challenge/control appraisal was also negatively associated with emotion-focused coping, and the stress/load appraisal contributed to more exhaustion.

Rupert and Morgan (2005) conducted a comparative study of 571 doctoral psychologists. The sample was surveyed on a modified version of scales developed by Farber and Heifetz (1981), the Psychologist's Burnout Inventory (PBI), and the MBI Human Services Survey. The results showed that the rate of personal accomplishment was higher among individuals and group practitioners than in agency settings. Women also reported higher levels of emotional exhaustion in agency settings, and men revealed higher levels in group or independent settings. Overall, dealing with negative client behavior or managed care clients, working more hours, and having low control in settings contributed to greater emotional exhaustion.

Volpe et al. (2014) assessed the presence of burnout among early-career mental health professionals. One hundred professionals, 50 medical and 50 non-medical staff, are surveyed by the MBI and the Beck Depression Inventory (BDI) to confirm the symptoms of burnout. The results showed psychiatrists were at greater risk of emotional exhaustion and had a lower rate of personal accomplishments. In contrast, non-medical practitioners showed a high degree of depersonalization as a coping technique and a higher level of depression, which is linked to burnout.

Vredenburgh et al. (2007) measured the extent of burnout in 521 counseling psychologists in private and hospital practice. MBI was

administered. Multiple regression analyses computed that levels of burnout were highest in a hospital setting compared to private practice. Further, hours of client contact per week were directly related to a sense of achievement. It was also concluded that males experience more depersonalization than females.

Kahil (1986) investigated the phenomenon of burnout regarding professional expectations and social support for graduate students and clinical practitioners. The "Tedium" burnout measure, the Provisions of Social Relations (PSR) Scale, and expectations measures were run on the sample of 255 participants. Burnout was found to be related to social support from family and friends and expectations from the profession rather than to experience in the profession or expectations. It was concluded that graduate students reported more disillusionment than practitioners.

Benedetto and Swadling (2013) researched to evaluate work setting, mindfulness, burnout, and preferences for career-sustaining behavior. The sample of 167 Australian psychologists was surveyed on the Copenhagen Burnout Inventory (CBI), the Five Facet Mindfulness Questionnaire (FFMQ), and Career Sustaining Behavior (CSBs). The results showed that burnout was unrelated to mindfulness or years of experience in current work settings. Career-sustaining behavior was poorly related to burnout. It was also found that coping strategies helped prevent burnout.

In another study, Rupert et al. (2009) explored the role of work-family conflict in levels of burnout. The sample of 497 psychologists was surveyed on the Human Service Survey (MBI), the Psychologist Burnout Inventory, the Work-Family Conflict and Family-Work Conflict Scales, and the Support from Family Scale. The findings suggested no gender difference among practicing psychologists. It was also found that family support contributed to well-being at work, and work-family conflicts helped understand the influencing factors of burnout.

McCormack et al. (2018) reviewed quantitative and qualitative investigative studies to examine the prevalence and causes of burnout among applied psychologists. Results indicate that emotional exhaustion was the most cited dimension of burnout. Workload and work settings were the most contributing factors to burnout. The study concluded that burnout was a concerning factors for all psychological interventions.

2.1. Research Significance

In recent years, it has been observed that workload and personal stress have also increased due to the increasing demand for clinical psychologists.

Clinical psychologists in Pakistan are facing day-to-day challenges in the clinical field. However, limited research explores the lived experiences of clinical practice related to burnout. The present study will fill in the literature gap by highlighting the perspective of Pakistani clinical psychologists regarding burnout experiences and their coping strategies. This study will explore the perspectives of clinical psychologists who are directly involved in giving psychotherapy.

Studying the underlying factors contributing to burnout in mental health clinicians in our society will help the government and policymakers reduce the situational factors leading to burnout. Further, the present study can also aid in developing a culture-specific burnout inventory for assessing burnout among Pakistani clinicians. The research purpose is two-fold since it will highlight healthy coping strategies that benefit other psychologists.

In a nutshell, the significance of conducting research is that the findings will aid in formulating informal policies about the mental health of clinical psychologists in the Pakistani context. The government can take preventive measures to guard clinical psychologists, which have potential applicability for mental health practitioners and researchers.

3. METHOD

3.1. Research Design

This study considered a qualitative research method with an interpretative phenomenological approach (IPA). It aimed to explore the lived experiences of burnout and coping strategies used by Pakistani clinical psychologists; therefore, phenomenological research design was used to seek the meaning of life events and human interactions. The phenomenology approach centers on the attempt to achieve a sense of the meaning that others give to their situations (Eatough and Smith, 2017). Guest et al. (2014) also recommended a phenomenological study to explore individuals' lived experiences, perceptions, and feelings.

3.2. Sample and Sampling Strategy

The purposive sampling technique was used to conduct this research study in Pakistan. Purposive sampling is a non-probability sampling technique that selects participants with specific desired characteristics easily and quickly (Crossman, 2020). The participants were recruited by consulting private clinical centers to find the best-suited sample. The selected psychologists from

varied clinics were contacted for interviews because their preliminary information aligned with the study objectives. A sample of six with ages ranging from 28 years and onward was selected through this sampling technique. Morse (1994) guided the use of six sample sizes for IPA. Smith (2007) also suggested a minimal number of participants for IPA studies. Creswell (2014) recommended a sample size between 3 and 10. A small number of cases (less than 20) will ease the researcher's close association with the respondents and enhance the validity of in-depth inquiry in naturalistic settings (Crouch and McKenzie,2006).

3.3. Inclusion Criteria

Clinical pswaslogists with at least an MS and two years of working experience were included. They were all selected from different private institutes.

3.4. Exclusion Criteria

Clinical psychologists who had no experience and were not practicing were excluded. Physically and psychologically impaired psychologists were also excluded.

3.5. Data Collection

The preliminary information of participants was collected through a demographic form, and then an interview guide was used to address research questions.

3.6. Demographic Form

This section holds information regarding qualifications, relevant experience, practicing institute, working domain, and impairments.

3.7. Interview Guide

Based on previous literature and theories on the present topic, an interview guide was developed for clinical psychologists. The researcher conducted semi-structured interviews in which open-ended questions were asked to the six selected participants in their solo interviews. In-depth interviews are the sole data source in qualitative research to seek personal information, lived experiences, perspectives, and occupational knowledge

(Johnson and Rowlands, 2012). The in-depth interview also reveals real-life queries and provides enriched information (Crouch and McKenzie, 2006).

The interviewing techniques of Kvale and Flick (2007) were used in conducting interviews. Introductory questions were asked to introduce the topic of research. For example, can you tell me about your burnout-related experiences? Follow-up questions were added to encourage the participant to provide vivid details. For example, tell me more about the precursors related to specific burnout experiences. Probing questions further revealed an in-depth inquiry. For example, can you give me a more detailed description of what happened? Direct questions were asked to get specific information. For example, what are the typical symptoms that you experience during burnout? How do you manage yourself after burnout? Interpreting questions are used to ensure confirmation between the researcher and the interviewee. For example, what does this expression mean to you as (expression explained)? Is that correct?

3.8. Data Verification

For data verification, the interview guide was checked thoroughly by two primary researchers to ensure the quality of the questions. In peer review, the data and research method are reviewed by someone with expertise in the researched phenomenon (Creswell and Miller, 2000). Goodwin (1984) also suggested peer debriefing to ensure content validity. The respondent feedback on the transcripts was taken from the interviewees for transcription quality. Bloomberg and Volpe (2012) emphasized member checking for accurate data. The bracketing and external audit were also used for quality and validity in data analysis (Vicary *et al.*, 2017). These methods were followed in the present study.

3.9. Procedure

At first, research approval was sought from the institutional review board of the University of Central Punjab, Lahore. Then, permission was obtained from the concerned clinical institutes to collect data. After seeking permission from the institutes, six female psychologists were recruited via purposive sampling. The primary aim of conducting the research was explained to the participants. Then, the researcher got written consent from the participants. The researcher conducted the interview after assuring privacy rights and getting permission to record the interviews. When using in-depth interviews, ethical guidelines must be followed (Allmark *et al.*, 2009). Rapport

building was established to calm the participant. Rapport is the central aspect that enhances honest data in face-to-face interactive interviews (Horsfall *et al.*, 2021).

Kvale and Flick's (2007) interview techniques were used to explore the lived experiences of clinical psychologists. The introductory, follow-up, direct questions, and other prompts extract more information. Bryman (2004) allows the interviewer to add probes for further exploration while developing rapport at the same time. Each interview took approximately 30 to 40 minutes. The interview process was completed within two months. The researcher was advised to use understandable language for interviewees (Bryman, 2001). The participants' native language was mainly used throughout the interview. The notes were taken during interviews to ensure the context of the discussion. The interviews were recorded side by side to cover every detail. After conducting the interviews, the data were transcribed by listening to the recording as soon as possible to prevent any information decay. Kvale and Brinkmann (2009) guided the transcription of a single interview in five hours to ensure the meaning displayed by interviewees.

3.10. Data Analysis

The interpretative phenomenological analysis (IPA) approach was used to analyze the data. IPA helps the researcher understand a phenomenon and extract rich, detailed information (Smith, 2007). Once the data was fully transcribed, it was then coded. Codes are the keywords used to categorize data in qualitative research. Throughout the coding process, the data was analyzed, categorized, and organized into themes and sub-themes (Sarantakos, 1998). The inductive coding was done by staying close to the data to generate possible interpretations. Any bias during the whole process of data analysis was kept in mind. The influence of researcher bias should be minimized throughout the coding process (Larkin and Thompson, 2012). Smith and Osborn (2003) proposed steps of IPA for qualitative studies used in this research study. These steps comprised seven stages, as follows:

1. The process started with the conduct of semi-structured interviews for data collection.
2. The analysis began with familiarising transcripts by reading and re-reading them several times. The left-hand margin of transcripts was utilized to note significant points.

3. The next step was identifying the themes, in which the right-hand margin was used for noting themes in phrases.
4. Next, the superordinate themes were created by grouping similar themes in clusters. In doing this, the connection between themes based on similarity was most important.
5. In the last section, the table was made by listing clusters and their subordinate themes. The table was ordered based on important superordinate themes.
6. The process was continued with further transcripts. The themes from the first transcript were used to look at similar themes in other data—a final table of all the themes made.
7. Writing the analysis was the final step. The essential themes with verbatim extracts were described in the result section.

4. RESULTS

The complete qualitative analysis explored a range of experiential themes; the following categories were chosen to elaborate on the significant elements of participants' experiences of burnout and coping strategies: Table 1 showed the themes with verbatim extracts regarding clinical psychologists' lived experiences of burnout, and Table 2 presented the themes with verbatim extracts concerning coping strategies used by these clinical psychologists. Figures 1 and 2 present the codebook that defines each central theme and subthemes that emerged during the analysis.

4.1. The Lived Experiences of Burnout

The study's findings revealed four significant themes in the lived experiences of burnout among clinical psychologists. The first theme concerned field challenges faced by clinical psychologists. The second theme explored their work dynamics. The third theme is related to psychological indicators. The fourth theme examined societal stigmatization. These themes are explained in this section using indicative quotations from the interview transcript.

Table 1. Lived Experiences of Burnout

Super-ordinate Themes	Sub-ordinate Themes	Example Quotes
Field Challenges	Client related issues	Ahhh... people need proper awareness. They have such fixed mindsets that they do not understand how rigid their behaviour.... especially regarding therapeutic interventions for their children. Even if we try our best to make them understand certain situations, they do not pay single attention to changing their mind patterns. Hmmm, this is because of class differences. Maybe... (pause) The biggest ISSUE is CLASS!!...
Work Dynamics	Hectic Schedule	When I deal with clients, I experienced burnout due to my tight schedule, hectic consecutive hours, and job. Whenever I feel emotionally exhausted is because of my work routine.
	Work Rumination	Generally speaking, no one has time. There is no me time. The ones who are professionals.... just want to apply therapeutic interventions all day, they completely indulge in it. As, after listening to problematic stories from clients, we also feel these overwhelming situations we do not have any buffer that filters these conditions from ourselves.... they automatically reside in ourselves. At times, we are mentally weak. These things create panic in us, too.
Psychological Indicators	Work Ethics	I want to add something that (pause) the biggest issue I felt..... ethics are not followed in this field. Ahhh! regarding my colleagues.
	Stress	In addition..... when I have to work on my cognition to make people understand that I am not judging you!! this is the burnout challenge I have to face... If I talk about the individual level, then..... when I have to change my thought pattern to make them comprehend that I completely empathize with you.
	Emotional Disturbances	It is stressful when you start your clinic..... things will change a little bit. It is not like those things will not affect you today, it is still affecting us especially when you emotionally connect to any client. This is so triggering! I had a client who was in the same situation as I was when my father was ill then I felt emotional disturbance at my level too.
	Helplessness	See... the burnout I felt is because of..... Ummm..... when I talk about my personal experience (pause) I practice privately now, so I experience burnout..... when I am unable to do something for the client! Even not only in a helpless state but also when you try to understand their caregivers but..... they are not willing to understand.

Societal Stigmatization	Societal Expectations	In such circumstances, burnout experiences are due to..... when everyone expects that you are a clinical psychologist in every field in every situation.
	Social Stereotypes	"OHH! So, if you are a clinical psychologist, then you will read our minds. You will know what is going on in our minds. Tell me what are my intentions? (Miserable tone) They do not understand that we are not magicians... no one knows the intention of another person

Theme 1: Field Challenges

All clinical psychologists indicated that their clinical roles are challenging and demanding. They must encounter extensive client issues, clinical trials, and workplace challenges in this field. The tiresome workload of therapy and counseling leads to problematic aspects of their professional and social lives. These conditions are prone to burnout. There are three subordinate themes in the field challenges:

Client-related Issues: The clients' issues are the biggest challenge that clinical psychologists face in an everyday setting. Participant 1 implied the negative side of clients:

"Ahhh, people do not have proper awareness!" They have such fixed mindsets that they do not understand rigid behavior, especially regarding therapeutic interventions for their children. Hmmm, this is because of class differences. "Maybe... (pause) The biggest issue is class."

She further added:

"Ummm..the biggest challenge people have nowadays is Google.. (pause) Then it becomes very difficult to tell them because they already have read the starting steps and questioned about how it is like that. Why is this not a reason? "So, this is the biggest challenge—to understand these types of people."

Participant 2 stated that the issues mostly raised from the caregiver side:

"The parents have high demands regarding their special needs children." They always want to admit their children to mainstream schools. These caregivers do not understand the problematic aspects of their child's issues, and they do not know that they are slow learners, so they proceed at a slow pace.

Hectic Schedule: Participant 4 continued to experience burnout due to workplace scenarios:

"When I dealt with the clients, I experienced burnout due to my tight schedule, hectic consecutive hours, and job. "Whenever I feel emotionally exhausted, it's because of my workplace routine."

She also mentioned the aspect of the lack of mental health facilities in workplace conditions.

"I observed that the biggest flaw in our society is that no organization pays attention to the mental health of therapists. These organizations do not signify the worth of a psychologist! Our sessions have no break, and we have to serve for long duty hours."

Theme 2: Work Dynamics

Some clinical psychologists noted the overindulgence in clinical tasks and the impact of ethics violations on work. The following two subordinate themes of work dynamics are:

Work Rumination: Participant 3 outlined the absence of leisure time in life:

"Generally speaking, no one has time." There is no me time. The ones who are professionals just want to apply therapeutic interventions all day; they completely Indulge in it. They primarily engage with clients all day. "At times, we are mentally weak, and then these things create panic in us too."

Ethics Violation: Participant 2 further described the internal problems of her field by mentioning the issue of ethics violation:

"I want to add something that (pause) the biggest issue I felt..... ethics are not followed in this field. Ahhh! regarding my colleagues..."

Theme 3: Psychological Indicators

Burnout affects clinical psychologists by increasing their stress levels, disturbing their emotional state, and leading to hopelessness. The three subordinate themes of psychological indicators are as follows:

Stress: Participant 6 described her condition of burnout due to stressful situations:

"In addition, when I have to work on my cognition to make people understand that I am not judging you! This is the burnout challenge I must face. If I talk about the individual level, then when I have to change my thought pattern to make them comprehend that I completely empathize with you, (sigh)."

She, later, adds that:

"And one more thing is that it is hard to tell people that you need therapy; even a fully educated person does not easily know." Believe me! I have to send voice notes to tell them that I need a session. You should take a session. You should go! (Aggressive tone)"

Emotional Disturbances: Participant 6 revealed her emotional disturbances as:

"It is stressful when you start your clinic. Things will change a little bit." It is not like those things will not affect you today; they are still affecting us, especially when you emotionally connect with any client. "This is so triggering."

Helplessness: Further, another participant found herself in a state of helplessness in clinical practice when:

"See, the burnout I felt is because of... Ummm, when I talk about my personal experience (pause), I practice privately now, so I experience burnout when I am unable to do something for the client! Even in a helpless state, when you try to understand their caregivers, they are unwilling to understand."

Theme 4: Societal Stigmatization

The impact of society cannot be denied in the core areas of psychological effects that directly interfere with our lives. While interviewing clinical psychologists, it became evident that they all had faced societal pressure in their lives. The two subordinate themes of societal stigmatization are:

Societal Expectations: Participant 5 described the role of parents in our society as demanding:

"Due to the attitudinal problems of children's parents, I sometimes feel that I should quit this field. As I also have a duty to visit homes in my job, I must face many issues regarding the demands of parents. I have also faced travel issues where my parents do not understand why I come late. "Then I do not know why they ask. They expect a lot."

Participant 3 highlighted the societal expectations of being a clinical psychologist in every domain:

"In such circumstances, burnout experiences are due to... when everyone expects that you are a clinical psychologist in every field

in every situation. Everyone assumes you must be an active listener in every case."

Social Stereotypes: Participant 3 further revealed the stereotypical views of our Pakistani society:

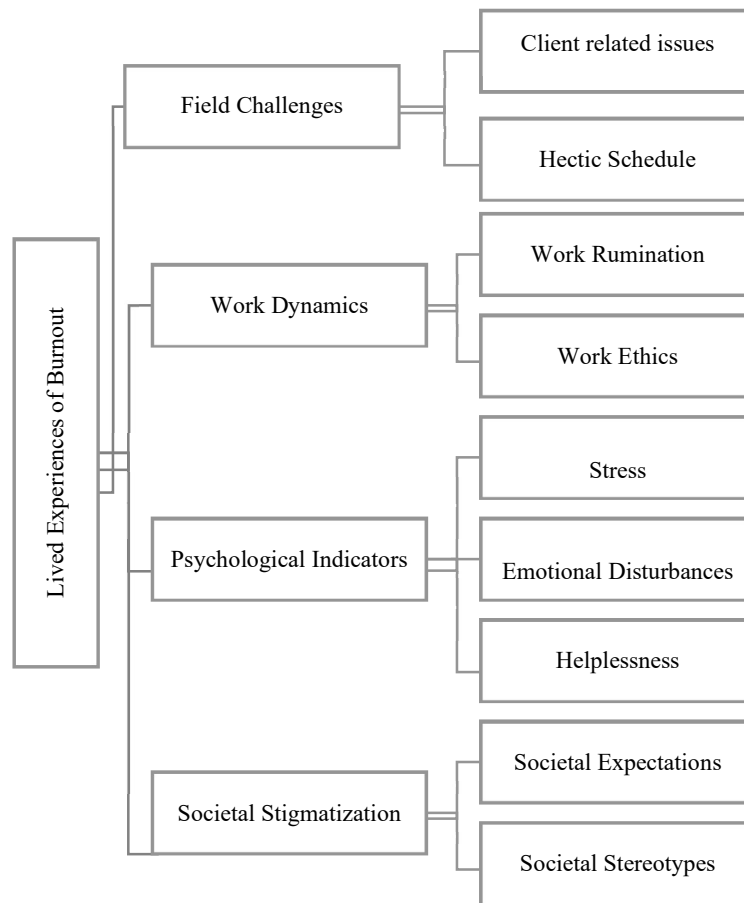
"OHH! So, if you are a clinical psychologist, then you will read our minds. You will know what is going on in our minds. Tell me, what are my intentions? (Miserable tone) "They do not understand that we are not magicians. No one knows the intention of other people."

Participant 6 also noted that:

"When you look at society, there is stigmatization. As I was talking about, even families start to stigmatize certain disorders. There is no societal acceptance. (feeling exhausted)."

The above quotations describe the social consequences of being in the clinical field since they demonstrate how people in our society negatively view the job of clinical psychologists. Our society does not appreciate the work of clinical psychologists. The people in our community undermine their values and label social stereotypes for the affected ones, their families, and the person treating them.

Figure 1. Themes of Burnout



Note. The figure explains the superordinate and subordinate themes of lived experiences of burnout among clinical psychologists.

4.2. Coping Strategies

Clinical psychologists used various coping methods to manage their caseloads, workplace burdens, and emotional exhaustion. The five main themes of coping strategies are as follows: The first theme concerns maintaining work-life balance in clinical psychology. The second theme explored emotional regulation by clinical psychologists. The third theme is related to areas of spirituality. The fourth theme examined reasons for motivation, and the fifth theme focused on having future hopes. These themes are discussed using indicative quotations from the interview transcript.

Table 2. Coping Strategies

Super-ordinate Themes	Sub-ordinate Themes	Example Quote
Work-Life Balance	Maintaining stamina	One should maintain balance in life. You must give time to your family, social settings, and clinic. So, in such situations, when you overburden yourself, you will ultimately burn out. But I manage my time accordingly.
	Leaving Emotional Baggage at Clinic	Ummm.... I also told you earlier about that.... My mentor in an internship once said that you should leave your clinic at its place; otherwise, your family life will be affected. From that day onwards until seven years now, I have followed these words. I made mental compartments in my mind regarding emotional stories from clients who resided only in the clinic.
Emotional Regulation	Catharsis	If I am stuck, I share it with my colleagues. Those hints are beneficial to me in client management and therapeutic plans. In this way, catharsis helps a lot.
	Self-Acceptance	Ahmm! Now, I have enough time in this field to understand the perpetuating factors, family response, and their output after two to three sessions. But..... yes, in the beginning, I stressed out why their family behaved in a certain way. Now, I have learned self-acceptance. I only focus on playing my active role. What family contributes..... they are answerable to them; I signify my part.
Spirituality	Patience	Hmmm... when I talked about coping... so in this, you need a lot.....a lot of patience and patience. You must discuss new ideas with others as you meet new concepts and learn from their perspectives. But patience is the foremost way of coping.
	Religious Affiliation	The coping strategy is only this ... you must actively play your part. You have to give your maximum potential after that and have faith in Allah.
Motivation	Human Welfare	At times, you are fed up. But... then, as a psychologist, your inner voice speaks... you should help someone. Humanity is my purpose.
	Intrinsic Motivation	The positive effects I felt..... I learned to manage time, have patience, and control anger. That intrinsically motivates me to continue to use this field.
Future Hopes	Extrinsic Motivation	The feedback from parents motivates you. When you observe any changing response from children, it is encouraging for you. The children's response has positively affected me.
	Inclination towards field	To deal with the human mind.... It is such an amazing thing to continue in your field. I will continue under any circumstances.
	No Intention to Quit	Hmm. I will not quit under any circumstances. In sha Allah! And another thing I want to say.... I want to do something for the people and will continue in this field.

Theme 1: Work-Life Balance

All clinical psychologists focus on maintaining a work-life balance. They added that by keeping a balance in your life, one can effectively manage work and family life. The two subordinate themes of work-life balance are:

Maintaining Stamina: Participant 3 elaborated on her experience of work-life balance in her life:

"In my opinion, one should maintain balance in life. You must give time to your family, social settings, and clinic. So, in such situations, if you overburden yourself, you will ultimately burn out, but I manage my time accordingly."

Participant 4 elicited that:

"Hmmm... it is noted that only one can do a hectic job and manage a routine if they are physically and mentally fit. "So, in this way, I believe that being physically and mentally fit has great importance, and I have such stamina that I work in hectic situations."

They were leaving Emotional Baggage at the Clinic: Participant 6 pointed out leaving the emotional baggage of clients' stories at your clinic to cope with the emotional burden.

"Ummm.... I also told you earlier about that... My mentor in an internship once said that you should leave your clinic at its place; otherwise, your family life will be affected. From that day onward until seven years ago, I followed these words. "I made mental compartments in my mind regarding emotional stories from clients that reside only in the clinic."

Theme 2: Emotional Regulation

Clinical psychologists regulate their emotions through catharsis, family support, and their persistent personality traits. Three subordinate themes are as follows:

Catharsis: Participant 3 managed emotions through catharsis.

"If I am stuck at any moment, I share it with my colleagues. Those hints are beneficial to me in client management and therapeutic planning. "In this way, catharsis helps a lot."

Participant 6 also pointed out the same way of coping:

"I do share with colleagues that these types of problems are arising. Then, they also share their stories. In this way, you understand that your colleagues are also facing a similar situation."

As you have heard, you feel relaxed when you listen to someone's grief. When you encounter other people in the same situation, your stress level also lessens. "This is the coping mechanism I follow."

Self-Acceptance: Participant 3 learned to shut off her anxieties through self-acceptance.

"Ahmm! Now that I have enough time in this field, I understand the perpetuating factors, family responses, and their output after two to three sessions. But, yes, in the beginning, I stressed why their family behaved in a certain way. Now, I have learned self-acceptance. I only focus on playing my active role. What family contributes... they are answerable to them. "I just signify my part."

Patience: Participant 2 focused on the importance of patience during clinical hours.

"Hmmm... when I talked about coping... So, in this case, you need a lot of patience. You must discuss new ideas with others as you meet new ideas and learn from their perspective. "But patience is the foremost way of coping."

Theme 3: Spirituality

Some clinical psychologists highlighted the domain of spiritual connection with Allah. Two subordinate themes in this domain are:

Religious Affiliation: Participant 3 described that:

"The coping strategy is only this: You must actively play your part. You must give your maximum potential and have faith in Allah after that. You cannot control everything and do not have power over things. Things take time. It would help if you did not vent to anyone. "Just believe in Almighty Allah."

Human Welfare: For some clinical psychologists, the caseload of clients was managed by driving themselves with the purpose of humanity. Participant 6 described that:

"Hmmm... this seems bookish, but I genuinely feel like doing something for the sake of people and society. "I want to do something for humanity and change people's narrative."

Participant 1 stated that:

"At times, you get fed up. But then, as a psychologist, your inner voice speaks, and you should help someone. Humanity is my purpose. "As I work with special needs children that do not even

perform simple tasks if they learn due to my efforts, it is a big achievement for me."

Theme 4: Motivation

Motivation from clients, supportive remarks from families, and the learning attitude help the clinical psychologists to continue their work with a new spirit. Two subordinate themes are:

Intrinsic Motivation: Participant 5 highlighted the positive aspects of being in the field of clinical psychology:

"The positive effects I felt... I learned to manage time, have patience, and control anger. That intrinsically motivates me to continue in this field.

Extrinsic Motivation: Participant 5 added that:

"The feedback from parents motivates you. When you observe any changing responses from children, it is motivating for you. The children's response has positively affected me."

Participant 1 highlighted the change in child behavior as a motivating force:

"Any little achievement from children is highly motivating for me. These things help me to work with them further. That is how I deal with my stress."

Theme 5: Future Hopes

Some clinical psychologists coped with burnout through their hopes for the future in this field. Two subordinate themes are explained as follows:

Inclination towards the field: For example, Participant 4 addressed that:

"To deal with the human mind is such an amazing thing to continue in your field. I will continue under any circumstances."

Participant 6 expressed her interest in the clinical field:

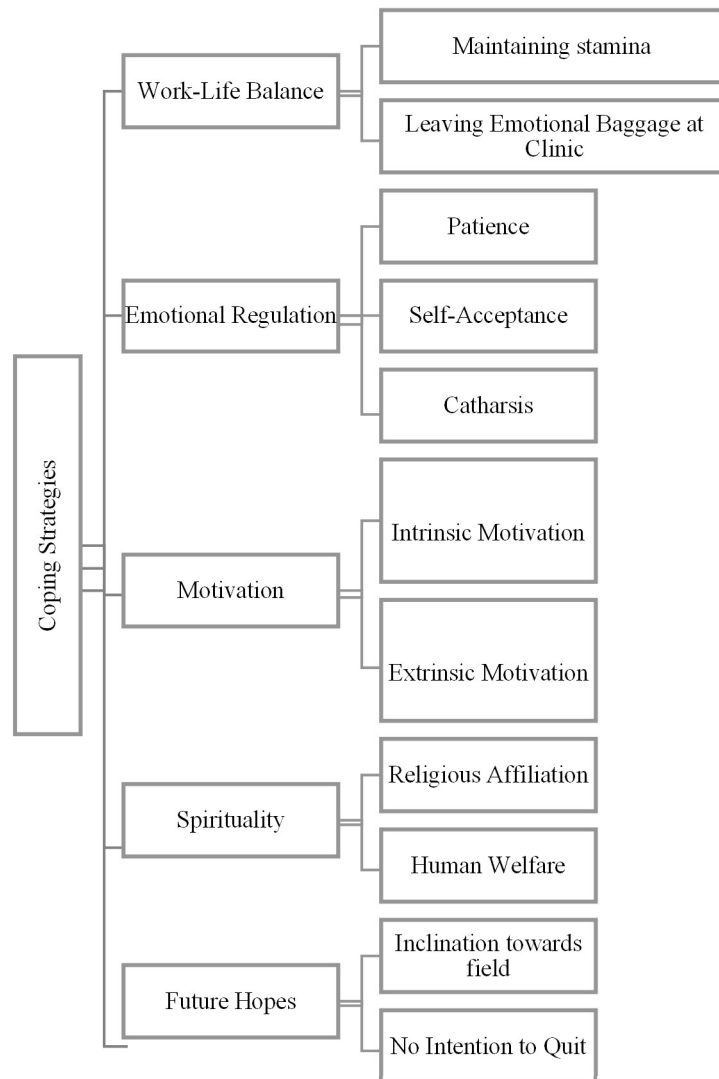
"I am a people person, so when you are a people person, you become socially intelligent in certain ways. So, according to my personality, I know this is the field that I am in, and psychology is the word that attracts."

No Intention to Quit: Participant 6 pointed out with great emphasis that:

"Hmm. I will not quit under any circumstances. In sha Allah! Another thing I want to say is, "I want to do something for the people so that I will continue in this field."

Participant 3 also gave the same thought: "I do not have any intention to quit."

Figure 2. Themes of Coping



Note. The figure illustrates the superordinate and subordinate themes of coping strategies used by clinical psychologists.

5. DISCUSSION

Considering the research objectives, the findings are consistent with the existing literature. In this study, clinical psychologists reported burnout due to workplace conditions, caseloads, hectic schedules, clients' irresponsible attitudes, and societal demands. Some of them also highlighted the role of clients' families in increasing their stress and emotional exhaustion. Further, clinical psychologists suggested using coping mechanisms to return to their everyday lives after the emotional exhaustion of clinical sessions. Some of them mentioned the cause of humanity and the role of supportive families in continuing their work. Others pointed out that they gained motivation from the client's recovery and positive feedback from their families.

Several previous studies, including Rupert and Morgan (2005) and Vredenburg et al. (1999), highlighted the role of work settings in experiencing burnout. The theme of field challenges relates to the most recent research studies by Angelika and Rzeszutek (2022) and Sciberras and Pilkington (2018). Both studies mention the challenging aspects of the workplace. Similarly, the issue of workload and work environment is significantly noted in the present study. Hammond et al. (2018) also support the critical findings of excessive workload and life stressors. McCormack et al. (2018) mention that the work setting contributes most to burnout. Their conclusions are parallel to the present study.

The theme of work dynamics highlights the issue of work rumination and ethics violations causing burnout. The work rumination in free time leads to burnout. It is strongly associated with work disengagement. The findings are consistent with the study on the relationship between personality, work, and personal factors and burnout (Allwood *et al.*, 2022). Psychological indicators play a crucial role in causing burnout. The presence of stress among clinical psychologists and disturbed emotional states due to clients' stories is a significant theme in interview transcripts. Similarly, Benzur and Michael (2007) theorized that stress mainly leads to burnout. The high challenge of the job is directly related to burnout among psychologists.

The theme of societal stigmatization is not present in the existing literature review. Due to Pakistan's development, people in Pakistan often stigmatize the social roles of psychologists and deny the psychological effects of mental illness. People mostly believe in superstitions and internalize negative stereotypes when seeking mental health. In Pakistan, people are not aware of mental health issues and deny the existence of any disorder in their child or any family member. Due to the lack of knowledge regarding mental

health care, families in Pakistan require substantial support for their emotionally disturbed family members.

The work-life balance helps the clinical psychologist cope with their emotional exhaustion. It is consistent with Sandoval (1993), who studies the effect of personality traits on burnout. It showed that well-integrated personalities are less prone to burnout. The regulation of emotions is the most critical component in establishing a balanced state of mind. A study of nearly 600 psychologists also indicated the coping strategies of self-awareness and balancing work and time with family (Rupert and Kent, 2007). McCormack et al. (2015) highlight the role of workplace social support rather than external sources in maintaining oneself.

The theme of emotional regulation through catharsis and family support is consistent with these research findings. Similarly, Benzur and Michael (2007) report that co-worker support negatively correlates with burnout. Rupert et al. (2009) also found that the role of the family is essential in coping mechanisms. Family and work conflicts influence burnout at work, and family support is crucial to well-being. The practical support systems of family help individuals with demanding aspects of work. The most important coping mechanisms were the support of a loved one and colleagues (Dallender *et al.*, 1999).

Furthermore, the theme of spirituality is common among religious-affiliated psychologists. The findings are not identified in the literature review. Since Muslim psychologists are interviewed, they usually have a stronger religious affiliation with their religion and a strong connection with the supreme power of Allah. However, the studies in the literature do not represent Muslim communities.

The clinical psychologists interviewed in the present study shared that even little achievements from clients and positive feedback from caregivers helped them cope with the mental pressure of their workload. Similarly, the theme of motivation in coping strategies is identified in Farber and Heifetz's (1982) research study. It indicates that appreciation and support systems are resistant to burnout. Sim et al. (2016) also reports similar client improvement and appreciation findings.

Some clinical psychologists have hopes for the future regarding their field and work that will help them move on. Their persistent personality traits allowed them to continue their fieldwork. This finding is consistent with the research study by Kahil (1986). The study concludes that career expectations provide supportable coping mechanisms. Hence, the literature review supports the major contributing factors to burnout and the use of coping strategies among

clinical psychologists. Some of the distinct findings exist because of cultural differences, professional barriers, and a need for more awareness at the community level.

6. CONCLUSION

The study's key findings explain that burnout mainly affects the professional lives of clinical psychologists. Field challenges are occurring in the lives of clinical psychologists due to the ineffective system of clinical centers. Moreover, psychological stressors lead to exhaustion. Societal pressure arises because of social stereotypes and stigmas associated with mental health. However, work-life balance, religious connection, support systems, and positive criticism make clinical psychologists determined to work for this more significant cause. The persistent personality trait conveys more support to cope with the stressors of clinical work.

The present study encourages mental health care practitioners to take appropriate action to prevent burnout severity and intensity among clinicians. Universities should construct self-care programs in clinical psychology programs to address the importance of mental health. The government can implement mental health care policies for the well-being of both clients and psychologists. As such, burnout affects the personal lives of both clinicians and clients. Therefore, research has implications for the well-being of clients and clinicians. The results lead to exploring the cross-sectional study of burnout and its causes.

The research study provided in-depth insight into the clinical experience of a selective sample of psychologists. A fundamental limitation is the small sample size of qualitative research, which does not represent a diverse population from rich cultural backgrounds. The small sample size and a more significant proportion of female participants limit the study, and findings cannot be generalizable to large data sets. It also does not provide quantitative statistical data that can be generalized to a broader population.

Future research can build on a mixed-methods approach to enhance the number of clinical psychologists. Another sampling technique can also be utilized to increase the probability of data. Further, longitudinal studies can be used to examine the long-term effects of burnout. There remains to be a gap in understanding clinical psychologists' underlying personal reasons for experiencing burnout at large. The absence of research on the personal impacts of clinicians can be explored. The prevalence of burnout is also under-researched, which can be highlighted in further studies.

Conflict of Interest Statement

The authors declare no conflict of interest.

Data Availability Statement:

The authors will make data and materials, including codes, available to any qualified researcher without undue reservation. A significant portion of interview transcripts are given in the form of tables and figures.

Ethics and permissions

The Institutional Research Board and Ethical Review Committee of the Department of Psychology, University of Central Punjab, approved the research proposal. Peers and colleagues reviewed this study. Informed consent was taken from all participants.

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