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Evaluation of Work Authorization Prescribed by the Dentists of Different Qualifications and Experiences for Fixed Prosthesis

Yasir Ali Shah[1], Mohammad Ali Chughtai[1], Muhammad Asif Nawaz[1], Soulat Jehan[2]

[1]Department of Prosthodontics, Sardar Begum Dental College, Peshawar, Pakistan
[2]Category D Hospital Badaber, Peshawar, Pakistan

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Correspondence to: Soulat Jehan, Department of Dentistry, Category D Hospital Badaber, Peshawar, Pakistan
Email: yasirdhadataflow@gmail.com

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ABSTRACT

Background: The quality and completeness of dental work authorization forms are critical for effective communication between dentists and dental technicians. Variability in the completion of these forms may be influenced by the clinical experience, education level, and designation of dental practitioners. **Objective:** To evaluate the work authorization prescribed by the dentists of different qualifications and experiences for fixed prosthesis to dental laboratory. **Methodology:** A cross-sectional survey was conducted among 384 dental practitioners in the duration from 18 February, 2024 to 17 February, 2025. Data were collected on designation, education status, postgraduate qualification, and clinical experience. The completeness of WAFs was evaluated based on specific instruction variables. Statistical analysis was performed to assess associations using appropriate tests, with significance set at $p \leq 0.05$. **Results:** The majority of participants were Trainee Medical Officers (41.7%) and postgraduates (54.2%), with FCPS being the most common postgraduate qualification (68.3%). Most dentists had 1–4 years of clinical experience (44.8%). The completeness of WAFs improved with increasing experience. For instance, the mention of return date increased from 56.1% among those with up to 1 year of experience to 96.5% among those with 5–20 years ($p < 0.001$). A similar trend was observed across other instruction variables such as crown type, pontic design, shade, and interocclusal record. **Conclusion:** Clinical experience influences the completeness of work authorization forms in dental practice. Enhanced training and awareness among early-career dentists may improve communication quality and treatment outcomes.

INTRODUCTION

The fabrication of a high-quality, long-lasting fixed dental prosthesis is a collaborative process that hinges on effective communication between dentists and dental laboratory technicians. In prosthodontics, the dentist, technician, and patient form an interconnected triad, where any communication gap can compromise the outcome and patient satisfaction (Afzal et al., 2022; Bashir et al., 2024; Moussaoui et al., 2024). The work authorization form is the primary tool for transmitting detailed instructions from the dentist to the technician, ensuring that the prosthesis meets the patient's clinical and aesthetic needs (Valvi et al., 2024; El Mesbahi et al., 2024). However, studies consistently reveal that these forms are often incomplete or unclear, leading to dissatisfaction and increased remakes (Bashir et al., 2024; Elsawaay & Khamakhim, 2023).

Recent advances in dental materials and treatment complexity have made clear, precise teamwork more important than ever. The job description card, or work authorization form, serves not only as a legal document but also as a practical guide for technicians, outlining essential features such as margin design, pontic design, and shade selection (Afzal et al., 2022; Hassan et al., 2024). Inadequate or ambiguous instructions can result in poorly fitting prostheses, patient discomfort, and even clinical complications (Valvi et al., 2024; Shetty et al., 2021). Surveys from various countries, including Saudi Arabia, Pakistan, and Morocco, have highlighted persistent deficiencies in communication, especially regarding technical and aesthetic details (Afzal et al., 2022; Moussaoui et al., 2024; El Mesbahi et al., 2024).

While multiple communication methods are available—including written forms, direct conversations, phone calls, and digital platforms—written work authorizations remain the most widely used and reliable for ensuring traceability and accountability (Moussaoui et al., 2024; Elsawaay & Khamakhim, 2023). The integration of digital tools, such as digital impressions and web-based communication, has shown promise in improving the transfer of information, but traditional forms still dominate in many settings (Tanabe, 2019; Moussaoui et

al., 2024). Despite these technological advances, the lack of standardized protocols and insufficient training in communication skills continue to hinder optimal collaboration (Valvi et al., 2024; Hassan et al., 2024).

The consequences of poor communication are significant. Incomplete or unclear work authorization forms are a leading cause of prosthesis remakes, patient dissatisfaction, and wasted resources (Bashir et al., 2024; Shetty et al., 2021). Studies have shown that many dentists leave critical design decisions to technicians, which can compromise the quality of the final prosthesis (Afzal et al., 2022; Elsawaay & Khamakhim, 2023). Addressing these gaps through standardized forms, enhanced education, and the adoption of digital tools is essential for improving patient outcomes and professional satisfaction within the dental team (Hassan et al., 2024; Valvi et al., 2024).

Ultimately, fostering a culture of open, precise, and consistent communication between dentists and dental technicians is vital for the success of fixed prosthodontic treatments. Ongoing research and education are needed to bridge existing gaps, promote best practices, and ensure that all members of the dental team are equipped to deliver the highest standard of care (Afzal et al., 2022; Moussaoui et al., 2024; El Mesbahi et al., 2024).

Hence, the need for proper communication between lab and clinician has to be further emphasized. The purpose of this study is aimed to investigate whether dentists provide the dental technician adequate information in our region regarding fabrication of a fixed prosthesis. Also, to determine whether there is a correlation between professional training/qualification and experiences of dentists, communication method, way of indicating crown design features and adequacy of design information. This study is crucial to benefit in terms of highlighting areas where improvement is needed and hence it contributes toward a good quality fixed prosthesis provision in Peshawar.

METHODOLOGY

Sample Selection

A descriptive cross-sectional study was carried out at Sardar Begum Dental College, Peshawar, over the course of one year from 18 February, 2024 to 17 February, 2025 after following ethical approval. The sample size was determined to be 384 using the OpenEpi calculator, with a 95% confidence level and 5% margin of error, and participants were selected through consecutive sampling. The study included work authorization forms for crown and bridge fabrication completed by house officers, trainee medical officers, and consultants in the Prosthodontics department, regardless of age or gender, while excluding misprinted forms, repeat prosthesis cases, and forms not filled by the responsible dentist.

Data Collection

Before data collection began, informed consent was obtained from laboratory technicians, dental lab staff, and relevant dentists after the study's purpose, procedures, risks, and benefits were explained. Data were gathered from the ceramic laboratory using a structured questionnaire, which extracted information from work authorization forms completed by eligible dental practitioners. The questionnaire collected details on practitioner designation and experience, return date of prosthesis, staining diagrams, material type, number of pontics, shade, prosthesis type, pontic design, and interocclusal check records.

Data Analysis

Frequencies, Percentages, Mean and Standard deviation were calculated for the variables such as return date, diagram for staining, type of crown, number of pontics, shade of crown or bridge, type of prosthesis, pontic design and interocclusal check record. Association between designation, education status and experience of the dentists with variables such as return date, diagram for staining, type of crown, number of pontics, shade of crown or bridge, type of prosthesis, pontic design and interocclusal check record was determined through chi square test, for which P value≤0.05 were consider significant.

RESULTS

Demographics

Table 1 presents the demographic distribution of dentists (n = 384) whose work authorization forms for fixed prosthesis were evaluated in this study. The majority were trainee medical officers (41.7%), followed by house officers (33.9%) and consultants (24.5%). More than half (54.2%) had postgraduate qualifications, with FCPS being the most common postgraduate degree. In terms of experience, the largest group had 1 to 4 years of clinical experience (44.8%).

Table 1

Demographic Characteristics of Dentists Who Prescribed Work Authorization Forms (n = 384)

Variable	Category	Frequency (n)	Percentage (%)
Designation of Dentist	House Officer (HO)	130	33.9%
	Trainee Medical Officer (TMO)	160	41.7%
	Consultant	94	24.5%
Education Status	Graduate	176	45.8%
	Postgraduate	208	54.2%
Postgraduate Degree (if applicable)	FCPS	142	68.3% of PGs
	MSc/MDS	66	31.7% of PGs
Experience	Up to 1 year	98	25.5%
	1–4 years	172	44.8%
	5–20 years	114	29.7%

Association between Dentist Designation and the Quality of Communication with the Dental Laboratory

Table 2 demonstrates the association between the designation of the dentist and the completeness of various instruction components on the work authorization forms. Consultants consistently provided more complete information across all variables, followed by TMOs and house officers. The differences across all variables were statistically significant ($p < 0.001$), suggesting a strong association between dentist designation and the quality of communication with the dental laboratory.

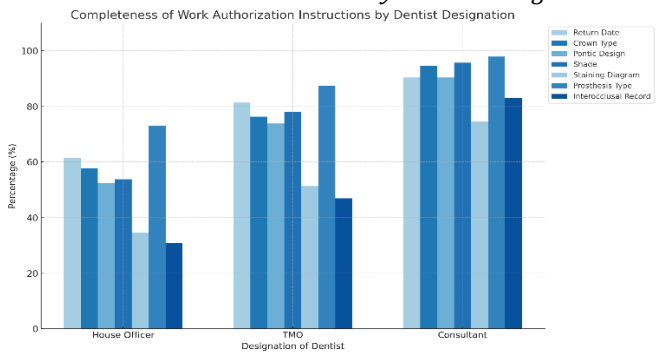
Table 2

Association Between Dentist Designation and Completeness of Work Authorization Form (n = 384)

Instruction Variable	House Officer (n = 130)	TMO (n = 160)	Consultant (n = 94)	p-value
Return date mentioned	80 (61.5%)	130 (81.3%)	85 (90.4%)	<0.001*
Type of crown mentioned	75 (57.7%)	122 (76.3%)	89 (94.7%)	<0.001*
Pontic design mentioned	68 (52.3%)	118 (73.8%)	85 (90.4%)	<0.001*
Shade mentioned	70 (53.8%)	125 (78.1%)	90 (95.7%)	<0.001*
Diagram for staining provided	45 (34.6%)	82 (51.3%)	70 (74.5%)	<0.001*
Type of prosthesis mentioned	95 (73.1%)	140 (87.5%)	92 (97.9%)	<0.001*
Interocclusal record mentioned	40 (30.8%)	75 (46.9%)	78 (83.0%)	<0.001*

Figure 1

Work Authorization Instructions by Dentist Designation



Association between Education Level and Completeness of Work Authorization Form

Table 3 shows the relationship between the dentist's education level and the completeness of the work authorization form. Postgraduate dentists consistently provided more comprehensive instructions than graduates across all variables, with statistically significant differences ($p < 0.001$).

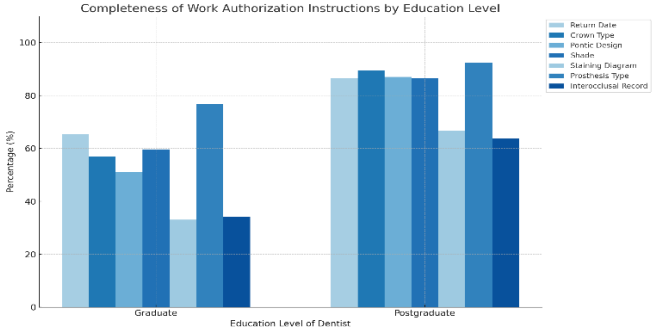
Table 3

Association between Education Level and Completeness of Work Authorization Form (n = 384)

Instruction Variable	Graduate (n = 176)	Postgraduate (n = 208)	p-value
Return date mentioned	115 (65.3%)	180 (86.5%)	<0.001*
Type of crown mentioned	100 (56.8%)	186 (89.4%)	<0.001*
Pontic design mentioned	90 (51.1%)	181 (87.0%)	<0.001*
Shade mentioned	105 (59.7%)	180 (86.5%)	<0.001*
Diagram for staining provided	58 (33.0%)	139 (66.8%)	<0.001*
Type of prosthesis mentioned	135 (76.7%)	192 (92.3%)	<0.001*
Interocclusal record mentioned	60 (34.1%)	133 (63.9%)	<0.001*

Figure 2

Work Authorization Instructions by Educational Level



Association between Clinical Experience and Completeness of Work Authorization Form

Table 4 illustrates the association between clinical experience and the completeness of instructions in work authorization forms. Dentists with more than five years of experience showed significantly higher documentation quality across all parameters compared to those with less experience ($p < 0.001$).

Table 4

Association between Clinical Experience and Completeness of Work Authorization Form (n = 384)

Instruction Variable	Up to 1 year (n = 98)	1–4 years (n = 172)	5–20 years (n = 114)	p-value
Return date mentioned	55 (56.1%)	130 (75.6%)	110 (96.5%)	<0.001*
Type of crown mentioned	50 (51.0%)	130 (75.6%)	106 (93.0%)	<0.001*
Pontic design mentioned	48 (49.0%)	120 (69.8%)	105 (92.1%)	<0.001*
Shade mentioned	52 (53.1%)	125 (72.7%)	98 (85.9%)	<0.001*
Diagram for staining provided	30 (30.6%)	85 (49.4%)	82 (71.9%)	<0.001*
Type of prosthesis mentioned	70 (71.4%)	150 (87.2%)	107 (93.9%)	<0.001*
Interocclusal record mentioned	30 (30.6%)	80 (46.5%)	83 (72.8%)	<0.001*

DISCUSSION

This study highlights a clear and significant association between the qualifications, experience, and designation of dentists and the quality of communication provided to dental laboratories through work authorization forms for fixed prostheses. Dentists with higher qualifications, greater clinical experience, and senior designations such as consultants consistently provided more comprehensive and complete instructions compared to house officers and less experienced practitioners. These findings are in line with recent research, which has repeatedly shown that insufficiently filled work authorization forms are a persistent issue, often leading to suboptimal prosthesis outcomes and dissatisfaction among both patients and dental professionals (Bashir et al., 2024; Valvi et al., 2024). The data revealed that consultants and postgraduates were significantly more likely to include critical details such as return dates, type of crown, pontic design, shade, and interocclusal records. This trend suggests that advanced education and clinical exposure foster a deeper understanding of the importance of precise communication with dental technicians. Similar observations have been reported in other studies, where the lack of detailed instructions—especially among less experienced or less qualified dentists—was identified as a major barrier to effective collaboration and high-quality prosthesis fabrication (Bashir et al., 2024; Shetty et al., 2021; Valvi et al., 2024).

Furthermore, the results underscore the need for targeted interventions in dental education and professional development. Both undergraduate and postgraduate curricula should emphasize the critical role of work authorization forms and provide practical training in their completion. Several studies advocate for the integration of communication skill modules and standardized work authorization templates to bridge the gap between dental offices and laboratories (Shetty et al., 2021; Valvi et al.,

2024). Such measures could help ensure that even less experienced practitioners are equipped to provide the necessary information for optimal prosthesis outcomes.

It is also important to note that while digital communication tools and electronic forms are becoming more prevalent, the fundamental challenge remains the completeness and clarity of the information provided (Valvi et al., 2024). Regardless of the medium, the responsibility lies with the prescribing dentist to ensure that all relevant details are communicated effectively. This study's findings reinforce the call for ongoing professional development and the establishment of clear, standardized protocols for work authorization in prosthodontics (Bashir et al., 2024; Valvi et al., 2024).

The quality of work authorization forms is closely linked to the dentist's level of training and experience. Addressing gaps in communication through education, standardization, and professional accountability is essential for improving the quality and longevity of fixed dental prostheses, ultimately benefiting both patients and the dental care team (Bashir et al., 2024; Shetty et al., 2021; Valvi et al., 2024).

This study relied on self-reported data and completed forms, which may not fully capture the nuances of real-time communication or informal exchanges between dentists and technicians. The study also did not assess the impact of communication quality on actual patient outcomes or prosthesis success rates. Additionally, the findings are based on a specific geographic and institutional context, which may limit their generalizability to other regions or practice settings. The study did not explore the perspectives of dental technicians in depth, which could provide further insight into communication barriers.

To improve dentist-technician communication in prosthodontics, it is recommended to implement standardized work authorization forms that prompt for all essential information. Incorporating communication skills training into both undergraduate and postgraduate dental curricula can help establish best practices early. Regular joint workshops and continuing education sessions for dentists and technicians can foster better understanding and collaboration. Embracing digital tools and technologies may further streamline information exchange and reduce errors. Finally, encouraging a culture of open, two-way communication and feedback between dental teams can enhance the overall quality of prosthodontic care.

CONCLUSION

Dentist qualifications and experience significantly impact the completeness of work authorization forms for fixed prostheses. Incomplete forms are linked to poor communication, leading to dissatisfaction and errors. Training in communication skills should begin early in dental education. Standardized forms and protocols are essential to improve prosthesis outcomes and teamwork quality.

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