

An Assessment of Dental Assistant's Performance, Speed and Quality of Work: A Dentist's Perceptions in Saudi Arabia

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ABSTRACT

Aim: The objective of this current study is to assess the dental assistant's quality of work in form of accuracy alongside performance, speed and evaluate its impact on different practitioners.

Materials and Methods: A cross-sectional digitalized survey was conducted among dental practitioners including both males and females. A digital structured questionnaire consisting of four sections was developed as follows: Section A: demographic questions, Section B: The accuracy of dental assistants in action, Section C: Speed of Performance of Dental Assistants, Section D: Quality of work for dental assistants. A link was published on social media, private and non-private hospitals, and the field research was on a large group from Saudi Arabia's hospitals.

Results: The behavior of dental assistants in the form of accuracy and speed of work affects the daily pursuit of the dentist directly.

Conclusions: Most study participants from both genders strongly agreed/agreed on items assessing DAs performance with its three domains (work accuracy, performance speed, and quality of work). The concepts and assessment of dental assistants' performance varied significantly by the gender of the dentists.

Key words: Dentist, Dental assistant, Quality of work, Dental practitioners

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INTRODUCTION

It has been known that the dental assistant (DA) plays a vital role in the rendering quality dental treatments to the patients alongside the dentist. This involves mutual trusting and understanding in order to achieve a common goal. According to the study conducted in the 20 dental practices in the South Thames region, effective communication between the dentist and his or her assistant affect the quality of the dental services as well as the staff turnover [1]. Dentist status, type of the practice and availability should of dental assistants are significant predictors of the job satisfaction. General practitioners employed in private practice with dental assistants are most likely to be satisfied [2]. A dentist with a highly skilled DA will make it easier for him to have a lot of time with each patient so that he works on

things that require the dentist to do and then complete the assistance [3]. Furthermore, a dental assistant with the necessary competence, clinical and administrative, experience and skill, thus making it easier for the dentist to succeed, gain time, and work with more than one patient at a time [4]. This can be accomplished only by a proper communication style that is characterized by an asymmetrical equal communication pattern. While the symmetrical communication is distinguished by a person responding just like the other, so it's a continual back and forth. Thus, the symmetrical communication tends to be very forward, direct, and well understood by both parties. After all, when someone communicates in the same manner as you, it's pretty easy and striving to obtain cooperation; a focus on the emotions and feelings of their conversation partner; exchange recognition of these feelings; and creating harmony and equality [5]. In the hospital settings, and in particular, with regard to the doctor-nurse relationship, the doctor is perceived as the dominant person who decides what will happen; the nurse is seen as a caring, gentle person, who takes care of the patient and follows the doctor's orders. The communication pattern between them has been described as: 'the doctor-nurse game, characterized by expedience and deceit. Although the nurse subtly influences actual patient treatment, the advice she

provides is given in a cryptic and an indirect way. Her nursing initiatives are not carried out in an overt manner as this would damage the doctor's authority. The experience of this subtle 'game' is to avoid arguments in front of patients and staff members while retaining the doctor's authority in the clinical arena [6]. They can also help relieve some of the stress a dentist faces in practice. Patients can feel nervous, so it helps to have the dental assistant talk to them and keep them calm and relaxed before the doctor comes. This is a big thing with patient retention and acceptance of a treatment plan [7]. On the other hand, dentists and dental office managers agree that the speed of DAs contribute to the productivity of the dental practice [8]. The DA plays a role in guiding the patient on treatment, in which allowing the dentist to move to the next patient more quickly and making all team members more effective [9]. Dental assistants affirmed that they contributed to the quicker and best work of the doctor and to the patient's comfort. Dental assistants are the best members of the team [10]. Therefore, the objective of this study is to assess the dental assistant's quality of work in form of accuracy alongside performance, speed and evaluate its impact on different practitioners.

MATERIALS AND METHODS

After obtaining the ethical approval from the Institutional Review Board (IRB) at Riyadh Elm University and after signing the consent form. An approval number of "FUGRP/2021/247/637/615" has been assigned.

A cross-sectional study was conducted using an electronic Google form survey and dental practitioners who follow certain eligibility criteria were involved.

Inclusion criteria

Graduates, general practitioners, specialists, and consultants, of all disciplines, Saudis besides non-Saudis, who are working in various government hospitals, private clinics, and/or university hospitals.

Exclusion criteria

Dental students, interns, hygienists, and dental assistants.

A digital structured questionnaire consisting of four sections is developed as follows:

Section A. Demographic questions.

Section B: The accuracy of dental assistants in action.

Section C: Speed of Performance of Dental Assistants.

Section D: Quality of work for dental assistants.

A link was published on social media, private and non-private hospital and field research on a large group of hospitals in Saudi Arabia, responses were collected, and then statistics and analysis were complete.

Sample size

The sample of 377 practitioners was determined

referring to the number of dentists over KSA if the expected good quality is 80% of the target population with a confidence level of 95% and marginal error of 5%, if the response rate is 90%.

Questionnaire validation and pilot study

Two experts have checked the questionnaire then pilot study conducted, each question was filled by 20 participants and final modifications have been done accordingly.

Statistical analysis

Data were presented as numbers and percentages. The comparison between two genders was performed using the Chi-square or Fisher exact test if the expected frequency was less than five. We measured the reliability (internal consistency of the scale) using Cronbach's alpha. Ideally, the internal reliability should be more than 0.8 to indicate the high internal consistency of the questionnaire. All analyses were performed using Stata 16.1 (Stata Corp- College Station- TX- USA). A p-value of less than 0.05 was considered statistically significant.

RESULTS

Participants' baseline data

The study included 407 dentists; 277 (68.06%) were females while 130 (31.94%) were males. Most of the participants were undergraduates (n= 173), and 110 (27.03%) had master's or higher degrees (Figure 1). The most common specialty of the study participants was general (n= 185) (Figure 2 and Table 1).

Work accuracy

Most of participants strongly agreed/agreed on all responses. We compared the questions assessing work accuracy between male and female dentists. Male dentist tended to strongly disagree/disagree more on the following items; DA should know about every procedure treatment, DA is keen on every detail in preparation for the treatment, DA must ensure that instruments are in the right place, and DA should have sound knowledge on teeth numbering and dental morphology. Other responses did not differ significantly between genders

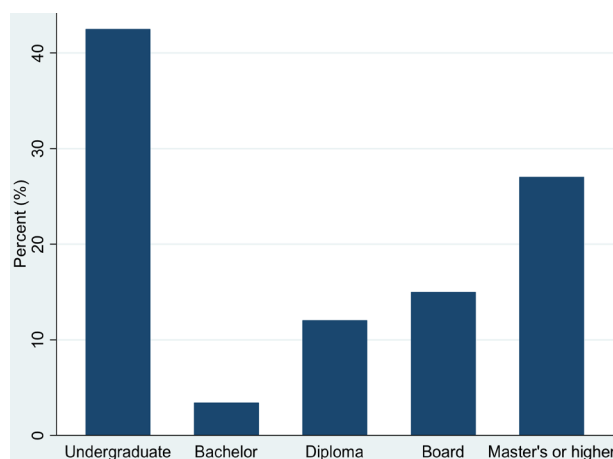


Figure 1: The education level of the study participants.

Table 1: The characteristics of the study participants.

(n= 407)	
Gender (n, %)	
Male	130 (31.94%)
Females	277 (68.06%)
Education (n, %)	
Undergraduate	173 (42.51%)
Bachelor	14 (3.44%)
Diploma	49 (12.04%)
Board	61 (14.99%)
Master or Ph.D.	110 (27.03%)
Specialty (n, %)	
Advanced Education in General Dentistry (AEGD)	30 (7.37%)
Endodontics	37 (9.09%)
Family medicine	1 (0.25%)
General dentistry	185 (45.45%)
Oral pathology	1 (0.25%)
Oral radiology	1 (0.25%)
Periodontics	29 (7.13%)
Prosthodontics	44 (10.81%)
Restorative	36 (8.85%)
Oral Surgery	18 (4.42%)
Orthodontics	25 (6.14%)

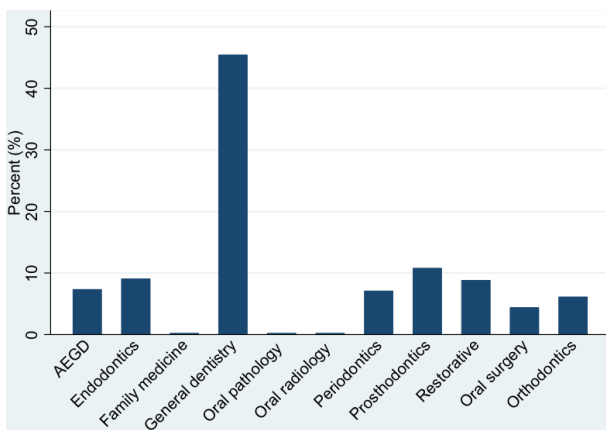


Figure 2: The specialties of the study participants.

Table 2: Comparison of work accuracy of dental assistants between males and females.

	Females (n= 277)	Males (n=130)	P value
Dental assistants follow specific rules and protocols, such as infection control procedures, when helping dentists treat patients?			
Strongly disagree	4 (1.44%)	4 (3.08%)	0.06
Disagree	9 (3.25%)	9 (6.92%)	
Neutral	84 (30.32%)	28 (21.54%)	
Agree	137 (49.46%)	60 (46.15%)	
Strongly agree	43 (15.52%)	29 (22.31%)	
Dental assistants are knowledgeable enough about every procedural treatment given to the patients			
Strongly disagree	3 (1.08%)	5 (3.85%)	0.01
Disagree	9 (3.25%)	14 (10.77%)	
Neutral	54 (19.49%)	21 (16.15%)	
Agree	132 (47.65%)	57 (43.85%)	
Strongly agree	79 (28.52%)	33 (25.38%)	
Dental assistants are keen on every detail in preparation for the treatment of the patient			
Strongly disagree	3 (1.08%)	4 (3.08%)	0.046
Disagree	10 (3.61%)	13 (10%)	

Neutral	55 (19.86%)	21 (16.15%)	0.13
Agree	114 (41.16%)	46 (35.38%)	
Strongly agree	95 (41.16%)	46 (35.38%)	
Dental assistants prepare or handle the precise tools needed for the treatment of the patient			
Strongly disagree	2 (0.72%)	3 (2.33%)	0.07
Disagree	9 (3.25%)	10 (7.75%)	
Neutral	62 (22.38%)	32 (24.81%)	
Agree	130 (46.93%)	51 (39.53%)	
Strongly agree	74 (26.71%)	33 (25.58%)	
Dental assistants must be good at keeping records of the patients, especially the treatment that was done			
Strongly disagree	4 (1.44%)	4 (3.08%)	0.01
Disagree	5 (1.81%)	8 (6.15%)	
Neutral	53 (19.13%)	24 (18.46%)	
Agree	133 (48.01%)	50 (38.46%)	
Strongly agree	82 (29.60%)	44 (33.85%)	
Dental assistants must ensure the dental instruments and materials are in the right place			
Strongly disagree	1 (0.36%)	3 (2.31%)	0.06
Disagree	5 (1.81%)	9 (6.92%)	
Neutral	55 (19.86%)	29 (22.31%)	
Agree	126 (45.49%)	46 (35.38%)	
Strongly agree	90 (32.49%)	43 (33.08%)	
Dental assistants can distinguish whether the patient is nervous or in pain			
Strongly disagree	2 (0.72%)	2 (1.54%)	0.048
Disagree	6 (2.17%)	8 (6.15%)	
Neutral	75 (27.08%)	29 (22.31%)	
Agree	132 (47.65%)	52 (40%)	
Strongly agree	62 (22.38%)	39 (30%)	
Dental assistants have sound knowledge of teeth numbering and dental morphology			
Strongly disagree	1 (0.36%)	3 (2.31%)	0.08
Disagree	8 (2.89%)	9 (6.92%)	
Neutral	67 (24.19%)	30 (23.08%)	
Agree	129 (46.57%)	48 (36.92%)	
Strongly agree	72 (25.99%)	40 (30.77%)	
Knowledgeable with troubleshooting in the clinic			
Strongly disagree	2 (0.72%)	6 (4.62%)	0.65
Disagree	8 (2.89%)	5 (3.85%)	
Neutral	71 (25.63%)	30 (23.08%)	
Agree	128 (46.21%)	52 (40%)	
Strongly agree	68 (24.55%)	37 (28.46%)	
Strong cognitive skills is a must in working alongside the dentist to avoid or minimize the error in treatment			
Strongly disagree	2 (0.72%)	2 (1.54%)	0.65
Disagree	7 (2.53%)	5 (3.85%)	
Neutral	69 (24.91%)	31 (23.85%)	
Agree	129 (46.57%)	54 (41.54%)	
Strongly agree	70 (25.27%)	38 (29.23%)	

(Table 2). The Cronbach's alpha for internal consistency of this questionnaire section was 0.84.

Dental assistants' quality of work

Male participants significantly responded by strongly disagree/disagree significantly more than females to the following items: DAs always display professionalism, DAs wear safety equipment, DAs must show genuine care to the patient, DAs should be able to listen to patients and other healthcare workers, DAs need to follow directions from a dentist or dental hygienist, so they can help treat

Table 3: Comparison of quality of work of dental assistants between males and females.

	Females (n= 277)	Males (n=130)	p
Dental assistants always display a professionalism			
Strongly disagree	4 (1.45%)	7 (5.38%)	0.01
Disagree	5 (1.81%)	7 (5.38%)	
Neutral	79 (28.62%)	30 (23.08%)	
Agree	128 (46.38%)	48 (36.92%)	
Strongly agree	60 (21.74%)	38 (19.23%)	
Good hygiene is a must for everyone giving treatment to the patient			
Strongly disagree	3 (1.08%)	3 (2.31%)	0.08
Disagree	3 (1.08%)	7 (5.38%)	
Neutral	59 (21.30%)	25 (19.23%)	
Agree	137 (49.46%)	57 (43.85%)	
Strongly agree	75 (27.08%)	38 (29.23%)	
Dental assistants wear safety glasses, surgical masks, protective clothing, and gloves to protect themselves and patients from infectious diseases			
Strongly disagree	0	3 (2.31%)	0.045
Disagree	8 (2.9%)	7 (5.38%)	
Neutral	82 (29.71%)	30 (23.08%)	
Agree	116 (42.03%)	51 (39.23%)	
Strongly agree	70 (25.36%)	39 (30%)	
Dental assistants must show confidence (a can-do attitude) to every procedure so patients are at ease during the treatment			
Strongly disagree	3 (1.08%)	3 (2.31%)	0.61
Disagree	8 (2.89%)	5 (3.85%)	
Neutral	66 (23.83%)	24 (18.46%)	
Agree	115 (41.52%)	55 (42.31%)	
Strongly agree	85 (30.69%)	43 (33.08%)	
Dental assistants must show genuine care to the patient			
Strongly disagree	1 (0.36%)	3 (2.33%)	0.02
Disagree	3 (1.09%)	7 (5.43%)	
Neutral	66 (23.91%)	24 (18.60%)	
Agree	122 (44.20%)	53 (41.09%)	
Strongly agree	84 (30.43%)	42 (32.56%)	
Dental assistants should be able to listen to patients and other healthcare workers			
Strongly disagree	0	3 (2.31%)	0.02
Disagree	5 (1.81%)	7 (5.38%)	
Neutral	64 (23.10%)	31 (23.85%)	
Agree	125 (45.13%)	48 (36.92%)	
Strongly agree	83 (29.96%)	41 (31.54%)	
They need to follow directions from a dentist or dental hygienist, so they can help treat patients and do tasks such as taking an x-ray			
Strongly disagree	3 (1.08%)	7 (5.38%)	0.001
Disagree	5 (1.81%)	9 (6.92%)	
Neutral	68 (24.55%)	31 (23.85%)	
Agree	116 (41.88%)	37 (28.46%)	
Strongly agree	85 (30.69%)	46 (35.38%)	
Dental assistants always show passion for his/her work advocating patient care and safety			
Strongly disagree	4 (1.44%)	4 (3.08%)	0.01
Disagree	2 (0.72%)	9 (6.92%)	
Neutral	62 (22.38%)	26 (20%)	
Agree	130 (46.93%)	55 (42.31%)	
Strongly agree	79 (28.52%)	36 (27.69%)	
Dental assistants must have good communication skills to have a better understanding of every instruction given by the dentist			
Strongly disagree	2 (0.72%)	3 (2.31%)	0.14
Disagree	3 (1.08%)	5 (3.85%)	
Neutral	66 (23.83%)	24 (18.46%)	
Agree	127 (45.85%)	57 (43.85%)	
Strongly agree	79 (28.52%)	41 (31.54%)	
Focuses on performing his/her job			
Strongly disagree	1 (0.36%)	7 (5.38%)	0.01
Disagree	7 (2.54%)	5 (3.85%)	
Neutral	53 (19.20%)	27 (20.77%)	
Agree	123 (44.57%)	48 (36.92%)	

Strongly agree	92 (33.33%)	43 (33.08%)	
Prompt response to patient			
Strongly disagree	2 (0.73%)	3 (2.31%)	
Disagree	4 (1.45%)	5 (3.85%)	
Neutral	53 (19.27%)	25 (19.23%)	0.19
Agree	137 (49.82%)	54 (41.54%)	
Strongly agree	79 (28.73%)	43 (33.08%)	
Ensure patient's comfort during the entire treatment procedures			
Strongly disagree	2 (0.72%)	3 (2.31%)	
Disagree	5 (1.81%)	5 (3.85%)	
Neutral	69 (25%)	30 (23.08%)	0.15
Agree	126 (45.65%)	48 (36.92%)	
Strongly agree	74 (26.81%)	44 (33.85%)	
Dental assistants are actively participating in learning new skills			
Strongly disagree	1 (0.36%)	5 (3.88%)	
Disagree	3 (1.08%)	6 (4.65%)	
Neutral	63 (22.74%)	32 (24.81%)	0.01
Agree	128 (46.21%)	54 (41.86%)	
Strongly agree	82 (29.60%)	32 (24.81%)	
Dental assistants must be willing to remain flexible and adapt to patients' needs			
Strongly disagree	0	3 (2.31%)	
Disagree	3 (1.08%)	6 (4.62%)	
Neutral	68 (24.55%)	25 (19.23%)	0.01
Agree	125 (45.13%)	53 (40.77%)	
Strongly agree	81 (29.24%)	43 (33.08%)	

patients and do tasks, such as taking an x-ray, DAs always show passion to his/her work advocating patient care and safety, DAs focus on performing his/her job, DAs are actively participating to learning new skills and DAs must be willing to remain flexible and adapt to patients' needs (Table 3). The Cronbach's alpha for internal consistency of this questionnaire section was 0.89.

DISCUSSION

Dental assistants are the largest segment of the dental workforce, they have a great role in raising the quality of dental care and contribute in elevating the healthcare and dental acts, if you've ever worked in dentistry, you've probably encountered a dental assistant. Before and after the patient's appointment with the dentist, they help the dentist with various chores, and they even participate in some of the dentist's dental treatments [11].

There are a variety of ways in which dental assistants can contribute to the success of the dental team. The dental practise act, which is found in the majority of states, lays out the precise duties and responsibilities of each dentist. Each state has its own unique set of laws governing dental assistant certification and regulation, including varying degrees of employer oversight. There are states where dental assistants can undertake advanced clinical procedures such as restorative dentistry and orthodontic therapy in addition to their standard duties [4].

In this study, around 407 dentists from different dental care centers in different private and nonprivate hospitals in Saudi Arabia, the results of this study showed that the dental assistant is an effective and supportive member of the dental clinic [12]. The dentist and dental assistant

must have a clear understanding of the work relationship and the factors affecting it, in order to be effective in providing the service, creating a more harmonious work environment, which in turn leads to greater pleasure and comfort. Friendly atmosphere for the patient who sees the quality of service. "The doctor is seen as the dominant person who decides what will happen", and the dental assistant is seen as the person who takes care of the patient [6].

Dentists also agree that the speed, accuracy, and quality of dental assistants contribute to the productivity of their dental clinics." It also facilitates the work of the dentist." It plays a role in guiding the patient to treatment" [1]. This allows the dentist to move to the next patient more quickly and makes all team members more effective [4]. It was in agreement with Yaneva-Ribagina, et al. [10] study who concluded that from total 108 different located dental assistants, most of the were convinced of the great benefits of their assistance; between 79.6% and 58.3% of them believed that they had contributed for quicker more efficient and better job of the dentist and to patient's comfort too.

A Dental Assistant with the necessary competence, experience, and clinical and administrative skill will make it easier for the doctor to work and buy time [4]. He is also responsible for selecting and preparing the tools and equipment that the doctor needs. Dental assistants also require a keen attention to detail. They must also be able to follow professional dental clinic instructions and regulations and be skilled in providing direct and indirect medical care to patients and making clinic procedures as smooth as possible. Dental assistants should be encouraged to meet appropriate collaboration

requirements for dentists of all specialties [13].

As it turns out from the study that there is communication problems between the dentist and the dental assistant in dental practices especially in the case of gender difference along with little feedback or evaluation, moreover, the very specific means of communication for the project can wait in a very opportunity to regain influence. Lack of training in the managerial skills of dentists may be a contributing factor here [14,15] and it was agreed with Breen, et al. [16] study who reported that there are tips to ease the communications between DAs and dentists by cultivation healthy teamwork through cultivating respect and admiration. The dental practise is a business that can only succeed if its employees and patients have excellent interpersonal relationships. This is something that every member of the staff must understand [17].

Communication is a two-way street, and it begins with the sender's concept, moves through their filter, moves through the receiver's filter [18] and ends with feedback. Think about how you want others to respond to your ideas when you're communicating effectively [19].

Working closely together in a general dental practice can cause many stresses and inter-personal problems. The main sources of stress are also categorized. Those that caused moderate to severe stress were: running behind time, feeling underappreciated by the dentist and dealing with difficult patients. Those who experience greater stress outside of work are more likely to report stress within it [20-22].

Evaluation of dental assistants working with a female dentist saw stronger "gender bonds" and work style, with a stronger "friendly relationship" and "personal interest" and work style. As we found, communication and working style between the dentist and the dental assistant in practices with female dentists are more related to gender than the practices of the dentist. Moreover, in practices with a female dentist, the style of communication and work is more friendly and contains more personal attention, when compared to the practices of male dentists [23]. It is also recommended to raise the awareness of dentists and dental assistants of gender influences in professional communication by including these topics in their own education [14,24,25], it is also in agreement with Gorter, et al. [6] study who reported that in dentists' interactions with the dental assistant, men dentists are more likely to be swayed by gender disparities than female dentists are. There were some regional variations to be identified. Dental education and research will benefit from the growing number of young female dentists.

Other factors could have affected the assessment and were not explored in this study. A larger study should be planned, including the possible variables that could affect the DA assessment.

CONCLUSION

Most study participants from both genders strongly

agreed/agreed on items assessing DA performance with its three domains (work accuracy, performance speed, and quality of work). Some responses varied significantly between male and female dentists. This indicates that the concepts and assessment of dental assistants' performance could be affected by the gender of the dentists. The study indicated the need for a unified tool to assess dental assistants' performance. This tool should consider the effect of gender on the assessment, and items with significantly different responses should be incorporated into dental assistants' assessment education programs.

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