MEDICAL SCIENCE

To Cite:
Alabdullah FM, Alharbi YJ, Alqahtani SHS, Almalki RA, Albalawi AS, Alsallami OA, Alqahtani RM. Paramedic's contributions in urgent and primary care systems. *Medical Science* 2023; 27: e387ms3263
doi: https://doi.org/10.54905/disssi.v27i142.e387ms3263

Authors' Affiliation:
[1]Emergency Medical Specialist, National Guard Hospital, Riyadh, Saudi Arabia
[2]Emergency Medical Specialist, National Guard Hospital, Jeddah, Saudi Arabia

Peer-Review History
Received: 21 September 2023
Reviewed & Revised: 25/September/2023 to 24/November/2023
Accepted: 28 November 2023
Published: 11 December 2023

Peer-review Method
External peer-review was done through double-blind method.

Medical Science
pISSN 2321–7359; eISSN 2321–7367

DISCOVERY
SCIENTIFIC SOCIETY

Paramedic's contributions in urgent and primary care systems

Fares Mohammed Alabdullah[1], **Yazeed Jazaa Alharbi**[1], **Sultan Hussain Saeed Alqahtani**[1], **Rayan Abdullah Almalki**[2], **Abdullah Saleh Albalawi**[1], **Osama Ali Alsallami**[2], **Rayan Mohammed Alqahtani**[1]

ABSTRACT

Our goal in conducting this study was to give a general overview of the clinical roles that paramedics play in urgent care and primary care settings. This review follows PRISMA standards, and we conducted a search through; Cochrane, MEDLINE, CINAHL, Embase, National Institute for Health and Care Excellence, and Embase, databases. Overall, 984 articles were collected, after filtration 5 articles were included in the review, using the Mendeley reference management software, duplicate studies were eliminated. Questions, aims, concepts, methodology, citations, and study findings are among the information that has been extracted. The paramedic practising in primary care had varying job titles across studies inclusing; paramedic practitioner, specialist paramedic, and emergency care practitioner. According to two studies, patients and other primary care doctors were perplexed by the range of titles, raising questions about the autonomy, scope of practise, and role of these paramedics.

Keywords: Paramedic, urgent care, primary care, contribution

1. INTRODUCTION

The economic and social transformation that Saudi Arabia is currently experiencing is unprecedented and revolutionary, creating significant difficulties for the delivery of healthcare services. One of the aims of the Saudi Vision 2030 is "To restructure the health sector to be a comprehensive, effective, and integrated health system that is based on the health of the individual and society including the citizen, the resident, and the visitor". Furthermore, in order to fortify the nation's health service infrastructure, the health sector transformation programme seeks to guarantee the equal distribution of health services (Alasiri and Mohammed, 2022). The goal of the pre-hospital emergency response system, also known as the EMS, is to treat patients for emergency medical issues both in and out of hospitals, including transporting them to the hospital if necessary (Al-Otaibi et al., 2023).

It is crucial to maintaining an integrated and well-coordinated health

system, particularly in times of emergency (Al-Otaibi et al., 2023). Prehospital emergency response in Saudi Arabia is mostly handled by the government-funded "Saudi Red Crescent Authority (SRCA)". It provides free EMS services to locals, tourists, and citizens (Alshammari et al., 2017; Alanazi, 2012). Paramedics can now operate in a range of healthcare settings outside of their typical employer in the ambulance service in developed nations. Acute hospital trusts, urgent care facilities, forensic medical facilities, and minor injury units are some examples of these environments. Paramedics' knowledge and skill set will surely expand and evolve as they move into these other sectors of care professions, providing opportunities for professional advancement outside of the ambulance service. This review's objective was to outline the most important reported findings from the published research in this area.

2. METHOD

This review was done in accordance with the extension for Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) standards, and the results are presented in a systematic manner (Tricco et al., 2018). For the Cochrane Database, MEDLINE, CINAHL, Embase, National Institute for Health and Care Excellence, and Embase, a search technique was created. For studies that were included, reference lists were examined and forward citation searches were carried out. A hand search was conducted for punished studies regarding paramedic's contributions on urgent and primary care between 2006 and 2023. Using free-text keywords and subject headings related to the one main concepts—paramedic contributions in urgent and primary care—databases were searched for published articles sine 2006 to 2023. Since retrieving all papers concentrating on paramedics in urgent and primary care, regardless of clinical presentation or evaluation, was the goal, search terms describing scope of practise were left out. Language restrictions or methodological filters were not used.

Retrospective literature that offers data pertinent to the review's goal was taken into consideration for inclusion. Titles and abstracts were filtered based on eligibility criteria, allowing records to be included or excluded. Using the Mendeley reference management software, duplicate studies were eliminated. All writers collected the complete texts of possibly eligible studies and first evaluated their eligibility. Authors compared and contrasted their chosen studies. Any differences that surfaced were explored until an agreement was reached. Overall, 984 articles were collected, after removal of duplication 751 remained, initial screening excluded 612 articles and the remaining 139 undergone evaluation of abstract for eligibility, then 54 full text articles were evaluated and after exclusion with reasons (Figure 1) the remaining 5 articles were included in the review.

Questions, aims, concepts, methodology, citations, and study findings—including role, scope of practise, commissioning, and education—are among the information that has been extracted. Data were gathered from research papers. Although the claimed techniques and findings were obvious, no authors were approached for more details. Each contributor extracted data, which was then debated in the group. All writers discussed data from the included research. The included studies have tabular summaries and descriptions. The main conclusions from the data extraction were then repeatedly presented. The nature and extent of the published findings within the identified research were described using a narrative synthesis.

3.RESULTS

Table 1 lists the attributes of the five included studies that were chosen for review. The included papers' different study designs included primary research. The paramedic practising in primary care had varying job titles across studies: "paramedic practitioner" Lattimer et al., (2010), Proctor, (2019), "specialist paramedic" Turner and Williams, (2019), or "emergency care practitioner" (Lattimer et al., 2010). According to two studies Halter et al., (2007), Proctor, (2019), patients and other primary care doctors were perplexed by the range of titles, raising questions about the autonomy, scope of practise, and role of these paramedics. Apart from the differences in titles, there were also differences in the clinical settings where paramedics were used. According to the studies, paramedics are employed in general practise, minor units, out-of-hours care, commissioned home-visiting services and general practise (Lattimer et al., 2010; Mason et al., 2006; Proctor, 2019; Halter et al., 2007).

In one study, paramedics rotated across primary care settings while continuing to work primarily for the ambulance service (Mason et al., 2006). According to every study we looked at, paramedics who work in interdisciplinary teams are a valuable addition to the primary care workforce. According to one study, patients could still favour visiting their licenced general practitioner over a paramedic (Proctor, 2019). Two more studies that were included also brought up the possibility that patients would not receive a straightforward consultation with a paramedic if they need to clarify therapy with a physician Lattimer et al., (2010), Mason et al., (2006), which would add a step to the patient journey. Researchers questioned the economic value of paramedics' attendance because other studies Halter et al., (2007), Mason et al., (2006) showed that paramedics spent longer time with patients than their primary care physician or nurse counterparts.

In one study, patients thought that the somewhat longer home visits by paramedics were beneficial (Proctor, 2019). Following paramedic care, three studies documented patient satisfaction (Halter et al., 2007; Proctor, 2019). While these studies show that patients who had a paramedic visit them at home reported high levels of satisfaction, in one study a small minority of patients expressed a desire to be evaluated by their general practitioner Proctor, (2019), and other patients expressed confusion regarding the reason for the paramedic's assessment (Halter et al., 2007). Table 2 described the main findings of the 5 included studies. Number of patients and staff in the included studies were described in (Figure 2).

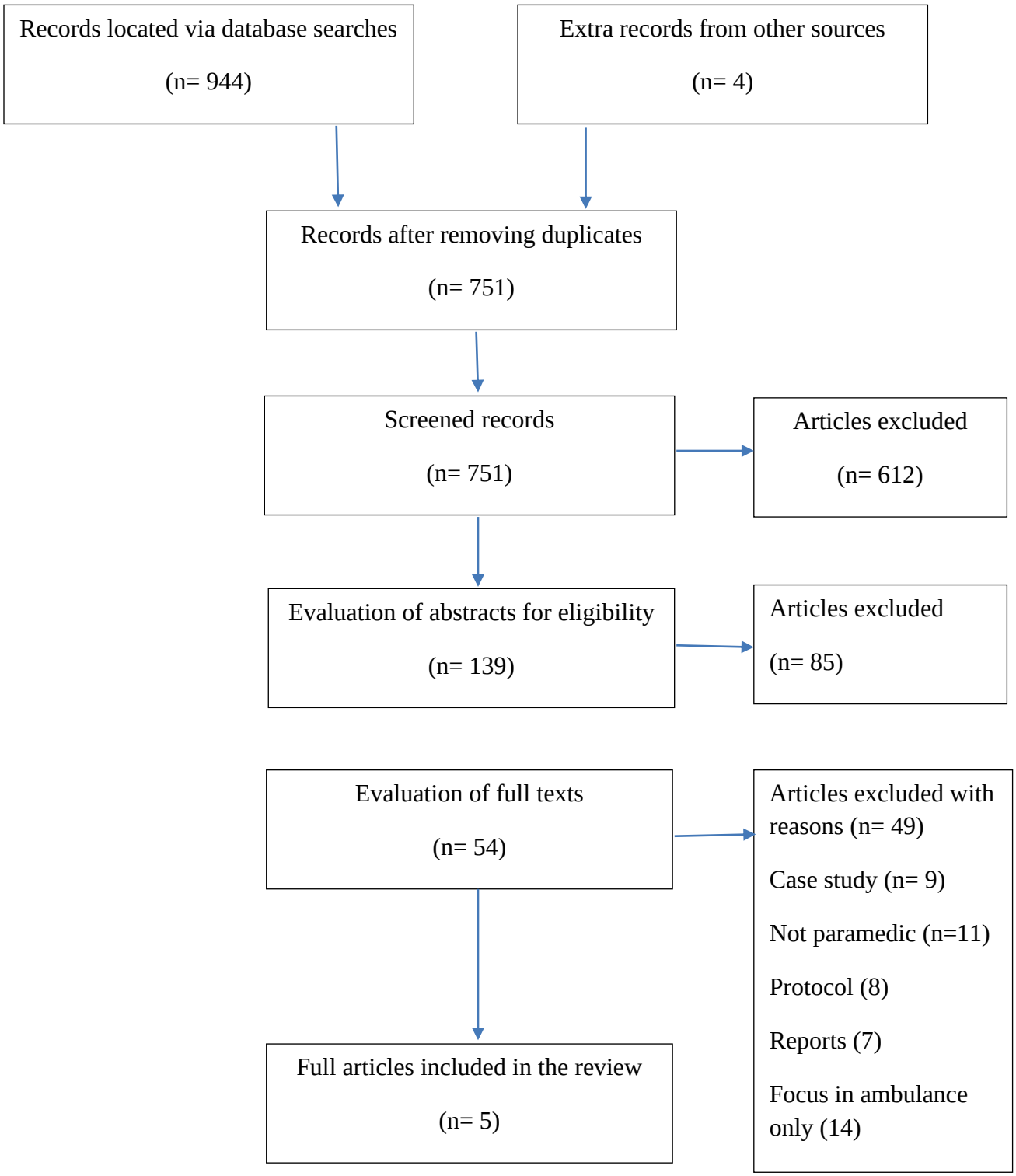

Figure 1 Consort chart of the selection process

Table 1 Characteristics of the studies included

Author and publication year	Study design	Data collection	Number of participants included	Concept	Community
Halter et al., 2007	Retrospective	Questionnaire filled using telephone administration	81 patients	Patient satisfaction	Emergency Care Practitioners
Lattimer et al., 2010	Retrospective	Interviews	120 staff and 129 patients	Competencies, skills and workforce	Paramedic Practitioners
Mason et al., 2006	Retrospective	Interviews	14 staff	Core skills and outcomes	Emergency Care Practitioners
Proctor, 2019	Retrospective	Face to face interviews (semi-structured)	Include 8 patients	Health assessment	Paramedic Practitioners
Turner and Williams, 2018	Retrospective	Interviews	30 clinical staff	Type of intervention	Specialist Paramedics

Table 2 Main findings of the selected studies

Citation	Main findings and conclusion
Halter et al., 2007	The majority of patients treated by Emergency Care Practitioners (ECP) at home were satisfied and compliant with the care delivered. It is unclear, whether a sizable minority of patients had misconceptions regarding ECP assessments. It is also unclear if these patients had pre-existing medical conditions that made them less likely to recover and more likely to seek hospital care, or if their subsequent recovery was hampered by their assessment and required hospital care. It is necessary to conduct more study to determine whether assessments made by ECPs are less clear than assessments made by other practitioners and whether it is feasible to guarantee that every patient understands every exam.
Mason et al., 2006	There are signs that the ECP initiatives are progressing in accordance with their initial goals and may be significantly affecting the workload of emergency services.
Proctor, 2019	To raise public knowledge of the paramedic practitioner role, information must be made available. The paramedic's function is evolving, although the contribution of paramedics working in primary care is not well documented in the literature.
Turner and Williams, 2018	It is feasible to rotate a group of adequately trained and experienced paramedics throughout various healthcare delivery settings. This will probably have a positive effect on patient experience and the recruitment and retention of paramedics in the ambulance services. This strategy for integrated healthcare delivery will enhance interdisciplinary and interprofessional teamwork and allow paramedics to make the most use of their vast skill set, knowledge, and experience without reducing the workforce of ambulance services.

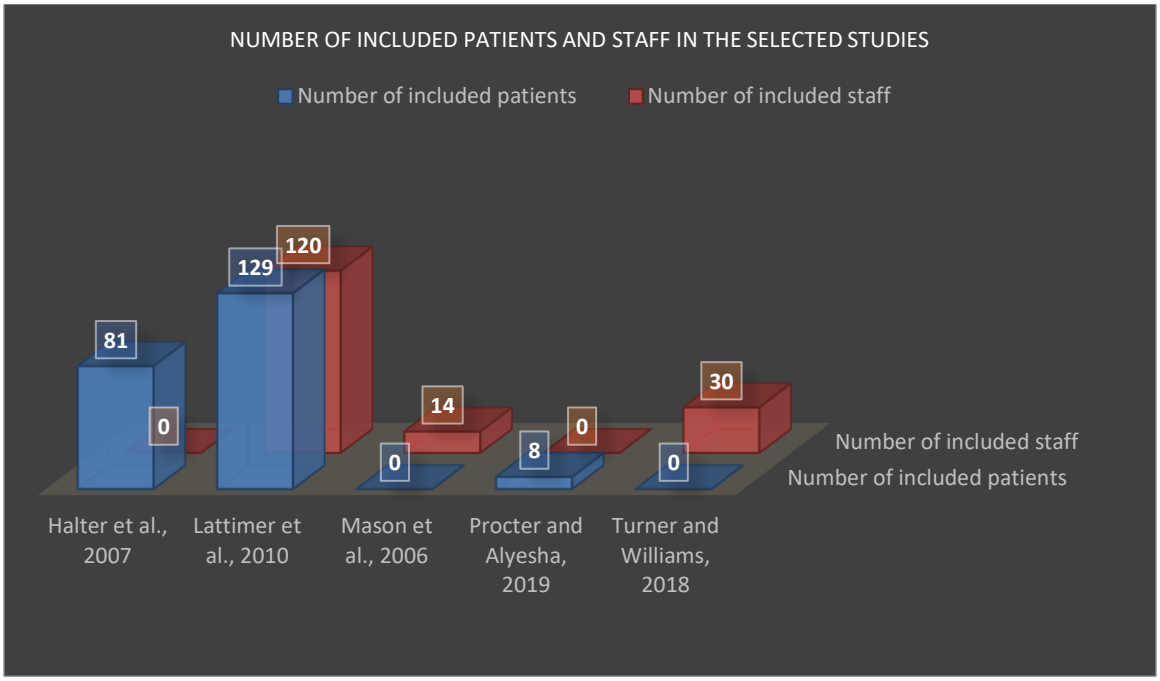

Figure 2 Number of patients and staff in the included studies

4. DISCUSSION

This review contains some evidence that suggests paramedics can safely assess and treat patients in primary care settings by using their enhanced skills, and that the employment of paramedics in urgent and primary care settings is well-received (Proctor, 2019; Turner and Williams, 2019). Nevertheless, there is also data showing that patients believe paramedics' roles and duties in primary care settings are unclear Halter et al., (2007), Proctor, (2019) which may not be helped by the variations in titles and areas of practise throughout clinical settings (Lattimer et al., 2010). This research demonstrates the range of job titles that paramedics in urgent and primary care settings work under in addition to the dearth of adoption of the professional body's guidelines on registered paramedic job names.

This review also highlights the range of environments in which paramedics operate as well as the generally comparable functions they play. Paramedics are likely to come across patients presenting with lower acuity problems in these varied settings. Since paramedics are typically trained to handle urgent and emergency presentations, these patients might not fully utilise the special skill sets that paramedics possess. Studies with paramedics working in minor injury units Mason et al., (2006) have not shown any distinction of autonomy, and paramedics who rotated from the ambulance service were still required to report to the senior physician (often the GP) while working in the primary care setting (Turner and Williams, 2019). If paramedics are to be used as effectively as possible, more research has to be done on the degree of autonomy provided to them in these types of contexts.

While working in urgent and primary care settings requires postgraduate education Lattimer et al., (2010), developing training programmes to educate paramedics for these environments is challenging due to a lack of standards. According to Turner and Williams, (2017) research, positions in urgent and primary care were regarded as training positions with mentorship and supervision. While many research suggest employing paramedics in primary care could save costs, only one study offered actual statistics to support this assertion, and even then, the data were merely estimates (Mason et al., 2006). More research is required to ascertain if paramedics in primary care may cut costs by, for example, allocating GP time to more complex patients with long-term illnesses and by independently managing both higher- and lower-acuity same-day presentations.

5. CONCLUSION

The evidence in this study shows that paramedics' roles in urgent and primary care are being promoted and implemented in developed nations, but it doesn't go into enough information about how paramedics contribute clinically in these settings. Further research is necessary to understand the how, why, and context of paramedics' current employment in urgent and primary care settings, as well as their total contribution to the primary care workforce, if primary care employers are to fully realise the potential of paramedics in these settings.

Ethical approval

Not applicable

Authors contribution

Fares Mohammed Alabdullah: Participated in all steps of research from the idea to the publication

Yazeed Jazaa Alharbi Alharbiya, Osama Ali Alsallami, Rayan Mohammed Alqahtani: Participated in collecting literature, searching databases, writing the discussion, method and conclusion

Sultan Hussain Saeed Alqahtani, Rayan Abdullah Almalki, Abdullah Saleh Albalawi: Participated in collecting literature, searching databases, writing the introduction and results

Funding

This study has not received any external funding.

Conflict of interest

The authors declare that there is no conflict of interests.

Data and materials availability

All data sets collected during this study are available upon reasonable request from the corresponding author.

REFERENCES AND NOTES

1. Alanazi AF. Emergency medical services in Saudi Arabia: A study on the significance of paramedics and their experiences on barriers as inhibitors of their efficiency. Int J Appl Basic Med Res 2012; 2(1):34-7. doi: 10.4103/2229-516X.96803
2. Alasiri AA, Mohammed V. Healthcare Transformation in Saudi Arabia: An Overview Since the Launch of Vision 2030. Health Serv Insights 2022; 15:11786329221121214. doi: 10.1177/11786329221121214
3. Al-Otaibi AM, Alghadeer SM, AlRuthia YS, Mobrad A, Alhallaf MA, Alghamdi AA, Althunayyan SM, Albaqami NA. The characteristics and distribution of emergency medical services in Saudi Arabia. Ann Saudi Med 2023; 43(2):63-69. doi: 10.5144/0256-4947.2023.63
4. AlShammari T, Jennings P, Williams B. Evolution of emergency medical services in Saudi Arabia. JEMTAC 2017; 2017(1):4. doi: 10.5339/jemtac.2017.4
5. Halter M, Marlow T, Mohammed D, Ellison GT. A patient survey of out-of-hours care provided by Emergency Care Practitioners. BMC Emerg Med 2007; 7:4. doi: 10.1186/1471-227X-7-4
6. Lattimer V, Burgess A, Knapp F, Dalton S, Brailsford S, Junior E, Moore M, Baverstock J, Heaney D, Roberts A, Hall S, O'Donnell C, Peckham S, Salisbury C, Banks J, Chalder M, Meads G, Dale J, Bosley S. The impact of changing workforce patterns in emergency and urgent out-of-hours care on patient experience, staff practice and health system performance, 2010.
7. Mason S, Coleman P, O'Keeffe C, Ratcliffe J, Nicholl J. The evolution of the emergency care practitioner role in England: experiences and impact. Emerg Med J 2006; 23(6):435-9. doi: 10.1136/emj.2005.027300
8. Proctor A. Home visits from paramedic practitioners in general practice: patient perceptions. JPP 2019; 11(3):115-121. doi: 10.12968/jpar.2019.11.3.115
9. Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, Moher D, Peters MDJ, Horsley T, Weeks L, Hempel S, Akl EA, Chang C, McGowan J, Stewart L, Hartling L, Aldcroft A, Wilson MG, Garritty C, Lewin S, Godfrey CM, Macdonald MT, Langlois EV, Soares-Weiser K, Moriarty J, Clifford T, Tunçalp Ö, Straus SE. PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. Ann Intern Med 2018; 169(7):467-473. doi: 10.7326/M18-0850
10. Turner J, Williams J. An evaluation of early-stage development of rotating paramedic model pilot sites. HEE 2019.