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## In This Issue

Volume 13 issue (1) marks the first issue of 2018 and that would normally have been published by March and the editorial team would be well into preparing for the second issue mid-year. However, circumstances outside the remit of the APJHM required an evaluation of how we organise and publish the Journal if it was to remain a sustainable element of a professional College into the future.

So, before we describe the changes I wish to apologise to authors and readers for the slow restart to APJHM in 2018. We would be interested to hear from you about this new approach as it unfolds. We would also appreciate your advice and suggestions about what you would like us to achieve to make the APJHM relevant and appropriate to your professional needs.

We have decided following consultation with our parent body ACHSM to move away from three distinct issues a year to an approach that can be described as 'publish when ready'. The idea is that as soon as we have an article ready we will publish. It may well be that we have a few ready at a time so it is likely that articles will be published at least monthly.

We will still signify that an article belongs to a current issue with running page numbers, so that for citation purposes the issue details and running page numbers continue. It should also mean that we might be able to speed up the editing and production process and get authors published earlier.

We are also awaiting the acquisition of new software that provides more functionality between authors, readers and others. However, instead of waiting for that functionality we have decided to press ahead with our earlier approach of uploading PDFs until that arrives.

In the hiatus our sub editor, Rose Ellis, who has been with the APJHM since its inception has decided to retire from that role to better cope with an already extensive workload elsewhere. We take this opportunity to mark the tremendous contribution to APJHM that Rose has made and wish her well in those other endeavours.

In her place, Yaping Liu, our Production Manager and College Librarian has agreed to take on the extra role of sub editor. Yaping is a very competent and effective member of our very small team and we appreciate her contribution.

In this issue Black and Fitzgerald provide a research article that further explores organisational climate and change through a social capital perspective. This subject is explored through the context of operating theatres and provides us with important learnings in this area.

We continue to receive contributions from our colleagues in India and the first of two contributions is from Katyal who in a research article describes patterns of utilisation of maternal healthcare services in Haryana, India. Katyal uses extensive data to describe the issues that impact on access and use of maternal healthcare services and how those issues might be addressed. In a second article from India, Mehra provides a research article that uses a mediation analysis approach to the research question of 'does consultation time influence patient perception of provider communication style, patient satisfaction, and word of mouth recommendations in India?'

Returning to an Australian context Rogers and colleagues provide a research article that examines the impact of shared versus individual office space on therapist's appraisal of their work environment. An important consideration around how clinicians of all descriptions can work more effectively with

each other whilst still achieving quality outcomes for clients.

We conclude our contributions for this issue, at this stage with the contribution of Conquest and colleagues who in their research article describe a comparison across the Australian landscape of three payment scheme systems

for public paediatric dental services and describes implications around access for those not closely located to available services.

David Briggs

Editor

## Editorial

# Publish or Perish: Perspectives from the APJHM for health managers

The term 'publish or perish' is familiar to most of us engaged in some way in academia and reflects the mantra that to have a successful career as a teacher, researcher and all-round academic wanting to be recognised as an expert in your discipline requires you to be well and regularly published. This directive also has added implications to not publish in 'any journal' but in ones that have high impact factors. This suggests that they have recognised quality articles that have been peer reviewed, have rigour in the editorial process and, therefore are difficult to obtain publication in, particularly for students and emerging researchers. Progression of careers are dependant on this mantra and, we all want to ensure that the quality of our research, our science is of the best standard.

This is of particular interest in business and management schools, including those teaching health management. The theoretical basis of management and organisations is relatively young and recent compared to the traditional sciences that we tend to emulate. Much of it is to be found in history and literature from the commencement of the industrial revolution, the art of war and that of politics. Despite this we all seem to have developed curricular that is heterogeneous and consistent over differing nations states. We all correctly consult with business and bureaucracies to find out their expectations of what they expect of our graduates to be business ready. In other words, it could be said that we are producing graduates to manage in organisations as they currently exist. This may not be a bad thing for maintaining the status quo.

However, those of us who have been around long enough know that our organisation and our management practice is by necessity focussed on change. We have been in the

midst of health reform for some decades. There is a constant drive for improved safety and quality of care, we are all ageing and demanding cure or, at least relief from discomfort. The ambit of what is included in healthcare continues to expand with wider knowledge and a community's sense of what is natural justice and what is equitable, particularly when the data around the socio-economic determinants suggests that those most in need appear to lack access and do not have contexts within which to improve. We are an expanding, growth industry, albeit still too focussed on illness and institutional care. There is much to be done in improved utility of services, both in terms of quality, efficiency and value, however designed.

Our earlier management learning was focussed on 'planning, organising, directing and controlling', more recently an emphasis on competencies. leadership and teamwork. Increasingly we talk in terms of capability in achieving quality outcomes, evidence based, best practice, pathways. We are assailed by social media and access to what was once only available to researchers now is freely available and regularly provided. We have become knowledge rich. It is evident that the current investment in clinical research is beginning to deliver significant outcomes in care delivery and, new ways and places to do things that will challenge many of our current policy settings and organisational approaches to change. Emerging technologies and artificial intelligence will expand the boundaries of possibilities and challenges we will all face. All of this gives added emphasis to another truism that 'we live in interesting times'.

In my view, the language of health reform suggests that health managers need to move on from the concepts described earlier to

those that demand that we be innovative, that we engage and deliver in networks, more so than organisations, that we must work in contexts, collaboratively across sectors, beyond traditional health systems and respond to 'social movements' of which there are many and engage more effectively with communities of all descriptions. We need to be resilient, reflective practitioners, sensemakers, demonstrating capability and attuned to diversity rather than uniformity and conformity. Most of all we need to be adaptive and take a critical inquiry stance of what health managers might be and do in an ever-changing landscape. So, do our current approaches to education of health managers meet these needs?

That context of health systems, no matter how much we dress it up as a commercial business, is substantially a people business, human beings serving others in the interest of all. It is probably too much expecting us to go back to including the humanities in our curricular, but it would be possible to add a greater emphasis on the behavioural, cultural and social sciences along with that emphasis on critical inquiry. It is also important to recognise that much of the management learning occurs while we work, strengthening the concept that in health management we learn by doing, we learn from others and we learn together. In my view the theoretical management and organisations constructs need to be woven into the educational experience and into continuing professional development.

Talking to some academic colleagues recently, we remarked that we had all entered the 'dark side' to become academics after our individual experiences and successes in the real operational world and we were all of the view that experience in both operational and teaching research dimensions made us the better person and professional. No doubt some academics have moved to their dark side of gaining operational experience. My view here is that rather than being one dimensional greater fluidity in roles across those spectrums might become a good thing. Increasingly, the challenge for researchers is to get the operational side to understand and implement

their findings and so forth. So, this brings us to the point of engagement. How do we translate knowledge into practice?

The recent movement to Advanced Health Research and Translation Centres (AHRTCs) through the National Health Medical Research Council is an important announcement and is evidenced in the announcement of the Centres for Innovation in Regional Health to be found at

<https://www.nhmrc.gov.au/research/centres-innovation-regional-health>. Evaluative criteria for these centres include:

Outstanding leadership in research and evidence-based clinical care that enhances the quality of health care in regional and remote Australia

Excellence in innovative biomedical, clinical, public health and/or health services research that addresses the challenges and opportunities of health care provision in regional and remote Australia

Programs and activities to accelerate translation of research findings into health care and ways of bringing health care problems to the researchers

Research-infused education and training

Health professional leaders who ensure that research knowledge is translated into policies and practices locally, nationally and internationally

Strong collaboration amongst the research, translation, patient care and education programs.

This and like initiatives might just be the answer to the academic lament of 'publish and perish' and perhaps academics in the future might be rewarded more for working closely with practitioners in translating knowledge into practice and evaluating the utility of existing services and practices.

What do these developments mean for the APJHM? Firstly, it affirms the reasons and

sense of purpose in ACHSM decision to establish the APJHM in the first place. These were described as:

Encourage and publish research into health management

Encourage member contributions

Encourage new and emerging researchers

Provide analysis, viewpoints and discussion, including quick article responses on health issues, policy and management

Demonstrate innovation, best practice, as well as emerging ideas and approaches

Foster collaborative practice and networks of health managers across Australia, the Asia Pacific and New Zealand

The APJHM is established to promote the discipline of health management throughout the region by facilitating the transfer of knowledge among readers by widening the evidence base for management practices and; to encourage a continuing contribution to the professional development of health and aged care managers; and promoting ACHSM and the discipline to the wider community. The APJHM

is the only peer reviewed journal specific to the body of knowledge of health management in our region and we are privileged that it continues to exist. We are responding to changing times as well by moving to a 'publish as ready approach' in open access journal format and subject to software purchase hope that our new presentation will allow greater functionality for both authors and readers. Importantly, it brings academics and health managers and health professionals together to achieve important collaborative aims.

Perhaps we should add an aim to our purpose to not just provide health managers who are business ready but lift our aim to produce health managers and leaders who are 'future ready'.

This editorial reflects the narrative of the Editor and, as such, I have not felt the need to go to the evidence base for citations. The evidence is strong in support but the points in the narrative should be self-evident for those engaged in the profession of health management.

DS Briggs

Editor

# Organisational Climate for Change And Innovativeness: A Social Capital Perspective

HELEN BLACK, ANNEKE FITZGERALD

Helen Black, Western Sydney University, School of Business, Penrith, New South Wales 2751, Australia  
Anneke Fitzgerald, Griffith University – IBA, Gold Coast Campus Parklands Dr, Southport, Queensland  
4215, Australia

Correspondence: [h.black@westernsydney.edu.au](mailto:h.black@westernsydney.edu.au)

## Abstract

**Purpose:** Acute health services around the world are increasingly required to respond to accreditation institutes, the changing needs and expectations of patients and societal values that demand continuous improvement in quality and efficiencies. Many change initiatives and innovative attempts have failed or resulted in lower performance than expected. The purpose of this paper is to increase understanding of the organisational contextual factors such as social capital and organisational climate that interact with the change implementation processes and provide a new perspective for change management in the unique environment of acute health care.

**Methodology:** This mixed methods study was executed in three different sized operating theatre suites. A survey and in-depth interviews were used to reveal a current organisational climate for innovativeness through team member perspectives. The strength of each organisational climate was assessed with reference to the level of disparity in the participant responses. In-depth interviews and observations provided understanding of how social capital is developed and maintained, then examined in context with the climate for innovativeness to understand how contextual factors, social capital and climate interact.

**Findings:** It has been demonstrated that social capital in the operating theatre suite has bearing on the organisational climate for change and innovativeness. Size and structure of an organisation influence how social networks develop; policies and management practices influence how different networks interact; and, the combination of contextual factors and social capital influences the organisational climate for innovativeness.

**Originality/value:** Managing social capital can offer a people-focused perspective through which to design and implement change and enhance an organisational climate for innovativeness.

**Keywords:** social capital, organisational climate, change initiatives, redesigning healthcare organisations

Health services in Australia and elsewhere are under constant pressure to increase throughput and improve efficiencies, including in surgical departments. [1] However, acute health services are characterised by highly specialised activities, unique organisational and social structures, and seemingly endless demand for better, faster and more efficient performance. [1-5] These pressures contribute to a continual need for change and innovativeness to achieve organisational efficiency and effectiveness. In a highly specialised environment, such as an operating suite where individual professional autonomy is of great importance, [6-8] increasing pressure from centralised reform initiatives creates a sense of ambiguity. [1-3,5,9] Thus, the combination of highly specialised activities and complex organisational and social structures provides an interesting context to explore social capital and organisational climate for innovativeness, especially when implementing change initiatives.

Designing and implementing change initiatives in any organisation can be challenging. [10-12] The operating theatre suite context is a unique and high risk environment [13] making implementation of change initiatives particularly complex. [14] For instance, in Australia a large amount of doctors are Visiting Medical Officers (VMO's). VMOs, such as surgeons, are not employed by the organisation and as such they interact differently in a formal organisational hierarchy creating a level of complexity to any change initiative.

In many cases, change initiatives have not delivered the expected level of improvements due to the focus of short term outcomes and technical implementation systems rather than

developing an in-depth understanding of contextual and social factors to enhance the change and innovative processes. [15-24] Hence, it is essential to consider what people bring to the organisation in terms of social capital. Therefore, social capital is an important factor in managing the climate for change and innovativeness of an operating theatre suite. [25]

In this study, a climate for change and innovativeness encompasses factors including aspects of openness to doing things differently, accepting/embracing ideas from outside, acceptance of risk taking, fostering team spirit, considering the effects of internal politics, levels of staff motivation, and levels of commitment to organisational goals. [25] Whether change initiatives are introduced from outside or innovativeness is initiated from within organisational units, this research proposes that one way of leading and maintaining a climate for change and innovativeness is for managers to direct their attention to managing social capital.

### **Literature Review**

Social capital is a dynamic concept that has been described in the literature through tie strength, [26, 27] extent of network closure, [28-32] and brokerage between networks. [33]

Social capital is referred to in the management literature as both an individual and a collective asset. [26, 34-40] Individual benefits to organisational members include the human need for membership and identification, satisfaction gained from the recognition of peers, and the inherent gratification of both giving and receiving support. [35] Organisational and collective benefits include



the quality of networks and relationships that enable individuals to cooperate and collaborate for collective purposes [26,36,38] and achievement of organisational goals through goal congruence. This paper aims to make the relationship between social capital and organisational climate explicit.

Social capital as a collective asset, refers to the quality of networks and relationships that enables individuals to cooperate and collaborate for collective purposes. [26,36,38] A sense of belonging and collective identity enhances trust and creates more effective collaboration in all environments, including operating theatre suites. Hence trust, a characteristic of social capital, is important in a climate for change and innovativeness.

Literature about social relationships in organisations indicates that the structure and quality of team member relationships may mediate the climate for change and innovativeness. [41-44] Social relationships provide a valuable organisational resource as an internal social structure, and may enhance the climate for change and innovativeness. [25] In organisational settings that are characterised by interdependence, such as acute health services, the quality of social relationships takes on greater importance. [41]

Cohen and Prusak [35] argue that things happen, or fail to happen, as a result of the way that human beings relate to one another [35] therefore, understanding social capital puts a focus on people and how they interact with each other.

## Methods

This study used a qualitative approach that included 17 semi-structured interviews and

several weeks of observation of staff behaviour and actions, to enhance understanding about social capital formation, maintenance, and influence of that behaviour and action on organisational climate for innovativeness. Interviews consisted of semi-structured open questions around themes, such as innovative processes, social networks, team spirit, communication, politics, education and satisfaction. The qualitative data was analysed with coding assistance from QSR NVivo 9 software, before comparative analysis was used to develop themes.

## Results and Analysis

This study found that the nature and strength of interconnections between people in the operating suite has bearing on the climate for change and innovativeness (aspects of openness to doing things differently, accepting/embracing ideas from outside, acceptance of risk taking, fostering team spirit, considering the effects of internal politics, levels of staff motivation, and levels of commitment to organisational goals).

We first establish understanding of social capital in an operating suite environment. This provides managers with an insight into how fostering social capital may influence a climate of change and innovativeness in their work place. According to interviewees, social networks are structured predominantly in professional segregations, as one nurse manager shared:

*“You’ve got the surgeons, you’ve got anaesthetics staff as in anaesthetists which sometimes*

*associate with the anaesthetic nurses, then you have got the anaesthetic nurses and recovery nurses, then you have got the scrub scout nurses, and then you've got the OAs."*

This segregation is also noted in the literature, which suggests that reinforcement of relationships is provided by homogeneity such as within a profession or clinical specialty. [45-47] Social networks that are based on professional boundaries vary in size in accordance with the representation of each group in an operating theatre suite. For example, the scrub and scout nurses have the greatest presence and therefore have the largest social network, which consists of sub-groups, as do the smaller profession-based social networks. One nurse's comments support the findings of the literature that further social network segregation also occurs according to life stage and lifestyle. [48,49]

*"The young people have a very strong social group, we have another older group, ... the ones in the middle are the ones with kids, and then you have the specialty groups within the unit, they form around the specialty, so the people who work in cardiac will do things*

*as a group, um, the people who work with ENT."*

The informal socialising ties of this deeper level of segregation are described in previous research [48] as the most liquid form of social capital. Relationships move from being solely instrumental and work-related to more expressive and affective elements. This change increases the level of trust between members through greater time, opportunity and motivation to strengthen and broaden their relationship. [50,51] These comments describe strong ties and support the literature that the strength of a tie is determined by a combination of the amount of time invested, and the level of emotional intensity, intimacy and reciprocity. [52,53]

It is our premise that strong ties are found to provide a sense of unity, support and a platform of values and beliefs, preparing for innovativeness. Whilst shared values and beliefs can provoke internal politics if they are not shared by all, strong ties between staff will provide a level of trust to present and embrace new ideas and provide for a level of motivation and shared risks.

Strong network ties are a basis for building social capital. However, strong network ties can also be difficult to manage. One NUM in the small operating theatre suite described how the social capital of some of the sub-groups with close ties can become limiting to the climate for change and innovativeness:

*"There [is] a bit of a gang mentality, one staff member would ark up about a*

*certain issue and they would all get on board.”*

This comment is in accordance with findings of the strong ties literature that ties can sometimes be too strong [48] and result in the negative aspects of the dark side of social capital. In one of the operating theatre suites it was observed how the staff perceived the unit as extremely specialised and that no experience or ideas from other operating theatre suite or acute health service could be relevant to their particular setting. This demonstrates an instance groupthink of how ‘the way we do things here’ is the only accepted way and provides a barrier to openness and innovativeness.

A nurse educator acknowledges the existence of exclusiveness in operating theatre suites:

*“Theatre is a hard area to break into; I don’t think that is just in theatre, I think that is in just about any specialist area.”*

The nurse educator suggests that the tight closure of the social networks in the operating theatre suite is related to the highly specialised nature of the environment. Excessive closure, the dark side of social capital, promotes exclusiveness, leading to negative impacts such as collective blindness, groupthink, and limitations on the group’s openness to alternative practices and outside information [43] and is detrimental to a climate for change and innovativeness. This finding is an advance to the organisational social capital literature and an important consideration in promoting a

climate for change and innovativeness. In addition to strong ties, there is also evidence of some weaker ties in the three operating theatre suites investigated.

A NUM demonstrated bridging social capital through her involvement in different committees:

*“Because of all the committees that I sit on, um, I am in touch with biomedical engineers, physicists, um, accreditation people, I mean my colleagues would have that access, but I have probably got more of a relationship because I am dealing with them so much.”*

This comment demonstrates the NUMs’ access to external professionals that represent great power and authoritative networks, and although the NUM acknowledges that her colleagues would also have that access, she indicates that her investment in and access to social capital with external professionals may be stronger than her colleagues through more frequent interaction. This is consistent with Bourdieu’s [34,47,54,55] view that investment in social connections reinforces and maintains social capital for future use, such as influencing a climate for change and innovativeness.

A diverse range of information and ideas provides opportunity to create unique combinations and innovative solutions to operating theatre suite problems. In addition

to internal bridges within the teams, bridges to networks outside of the operating theatre suite and outside of the organisation provide opportunity for combining existing knowledge with new knowledge and to promote innovativeness. A healthy climate for change and innovativeness relies on a level of openness between internal networks to allow cooperation and knowledge transfer to generate and utilise innovativeness. Bridges between internal networks are important to support a climate for change and innovativeness. This finding of this study is not apparent in the literature and therefore represents an advance on understanding bridging capital.

### Discussion

Bridging ties are found to provide individual benefit through membership, satisfaction and support, and collective benefits of openness, collaboration, resourcefulness, and organisational commitment. Therefore, an understanding of social capital within organisational units may assist managers to facilitate a climate for change and innovativeness by promoting particular types of connections between team members. Some of this is already attempted, especially in the large and small operating suite. It was observed that the large and small operating theatre suites provide a greater number of opportunities for staff to participate in meetings and education sessions. However, in the medium operating theatre suite, meetings are scheduled less frequently, on fixed days, during an afternoon theatre session, and regularly cancelled, which places greater reliance on social capital and informal knowledge sharing. Therefore, in that particular operating suite, managers should

attend to creating bridging ties and the opportunities that present for improving the climate for change and innovativeness by scheduling gatherings more thoughtfully.

The literature, [56-58] regards a high level of closure and tie strength in professional sub-groups, and a large number of bridging ties with other networks as a dual network structure. Bhandari and Yasunobu [59] suggests that a dual network structure can positively influence social capital. The benefit of a dual network structure is described in the literature [56] as the coexistence of bridges for structural holes to provide access to diverse resources, in addition to the network cohesion that is required to build trust, accomplish common goals and consequently promote innovativeness. Therefore, it would be beneficial for managers of operating theatre suites to stimulate internal and external bridging ties, in addition to social cohesion to build strength of ties whilst promoting openness to enhance a climate for change and innovativeness.

In terms of social capital, the concept of "Internal politics" provides another layer of commonality that can lead to exclusivity through alignment of different values and beliefs. Participants in this study discussed internal politics in terms of influences of power held by certain professional and non-professional sub-groups e.g. doctors, older workers, gender etc. The power of the sub-groups was described as somewhat exclusive and influencing the behaviour of non-group members. However, some sub-groups have formed around special interests outside the workplace, such as quilting, and are found to span boundaries of clinical specialties and life stages, thus providing strong bridging ties

between sub-groups, without density and homogeneity.

In this study, internal politics in the operating theatre suite is found to be indicative of the presence of strong social capital in clinical specialties and life stage groups, but not necessarily found to be a factor in special interest groups. Therefore, internal politics are less present in strong bridging ties which are developed without density; a lack of density reduces exclusivity and enhances openness to outside ideas and resources. [60,61]

The chosen organisational internal structures for allocation of members are found in this study to influence the type of social capital connections between organisational members. For instance, the medium operating theatre suite organisational structures allow specialty sub-groups to retain their members by maintaining clinical specialty allocation of individual staff members, whereas the large and small operating theatre suites rotate staff through clinical specialties to promote multi-skilling.

In the small and large operating theatre suites, rotation between specialties may dilute the paradigms of individual specialties, providing opportunity for a shared set of values to develop broadly in the operating theatre suite. However, rotation through specialties also facilitates a reduction of frequent interaction, particularly in the greater pool of the large operating theatre suite, which may reduce structural foundations for bridging social capital to develop among staff.

On the other hand, rotation in the small operating theatre suite may provide enough distance between organisational members to

negate density and social capital becoming too strong. Therefore, organisational structural choices need to consider the size of the pool of organisational members and address the factors of frequency of interaction, density and bridging opportunities. Structures and policies can promote optimal tie strength and value sharing to achieve a balance between individual and organisational benefits of social capital in an operating theatre suite. This may be achieved in practice through frequent meetings and opportunities for social interaction in combination with staff rotation and multidisciplinary committees to facilitate diverse work-based networks and bridges between diverse groups. However, other organisational contextual factors such as size should also be considered.

Different policies of staff allocation in combination with differently sized operating theatre suites are evidenced to have different influences on social capital. Contextual characteristics may promote density with some small groups and reduce frequency of interaction with others, and this is demonstrated to reduce openness, promote exclusivity and provoke internal politics. These factors in turn affect the climate for change and innovativeness in an operating theatre suite; however, these characteristics can be managed in differently sized operating theatre suites through facilitation of social capital through practices such as staff allocation policies, formal meetings, informal social meetings, and promoting openness. This study has found that managers of acute health services may use structures and policies to develop social capital, both formally and informally, to facilitate a climate for change innovativeness.

## Conclusion

Understanding social capital in an organisational context provides a people-focused perspective to managing a climate for change and innovativeness. Such a perspective is relevant in acute health services as social structures in this context have previously proved resistant to organisational change initiatives. [62]

It is apparent that social capital may provide a new perspective to address certain weaknesses of a climate for change and innovativeness. For instance, openness, internal politics and organisational commitment are manageable through policies that facilitate social capital. Although related, organisational climate and social capital are found to be neither dependent on nor mutually exclusive to each other and must be assessed in context. These results are an advance on existing literature and provide opportunity to start the conversation and design specifically focused initiatives to facilitate and manage social capital and climate for change and innovativeness in an acute health service context.

The contribution of this study to theory and practice is the explicit attempt to link social capital to a climate for change innovativeness, adding social capital as a relevant construct of organisational context. This study has highlighted the complexity of these concepts. Managing social capital can offer a people-focused perspective through which to design and implement change and enhance a climate for change innovativeness.

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# Patterns of Utilisation of Maternal Healthcare Services In Haryana, India

SONAL KATYAL

Management GD Goenka World Institute, Sohna Gurgaon Road, Gurgaon 122001, India

Correspondence: sonalkatyal@gmail.com

## Abstract

**Background:** Despite being a relatively smaller state, Haryana's per capita Gross State Domestic Product (GSDP) is high. The statistical data on the status of women has a different story to share.

**Objective:** This study analyzes the maternal healthcare situation in Haryana to examine the differential in utilization of maternal health care service i.e. antenatal care on the basis of socio economic and socio demographic indicators such as Women's age at Birth, Birth order, Education, Residence, Religion, Wealth index and Caste.

**Methodology:** The present study uses the third round of the National Family Health Survey (NFHS) data which is similar to the Demographic and Health Surveys (DHS). DHS collects, disseminates national data on health and population in developing countries.

**Findings:** indicate that economic status, husband's education and caste have effect on the utilization of antenatal care services.

**Conclusion:** The present study demonstrates several socio economic and demographic factors affecting the utilization of antenatal care services in Haryana. Efforts need to be taken at community and household level to improve utilization.

**Abbreviations:** NFHS- National Family Health Survey; DHS- Demographic and Health Surveys; MDG- Millennium Development Goals; SC/ST-Scheduled caste/Scheduled tribe; WHO-World Health Organization; MOHFW- Ministry of Health and Family Welfare; ANM – Auxiliary Nurse Midwife; VIF – Variance Inflation Factor; OBC- Other Backward Classes; ANC- Antenatal Care; TBA – Trained Birth Attendant.

**Keywords:** Maternal Health, Antenatal care, Health Indicators, socio-economic status, Accessibility, Haryana, India.

## Introduction

One of the eight Millennium Development Goals (MDGs) set by United Nations in 2000 is to improve the maternal health targeting at reducing the maternal mortality ratio by three quarters between 1990 and 2015 and to achieve universal access to reproductive health by 2015. Maternal mortality is unacceptably high about 800 women die per lakh live births from pregnancy or child birth related complications around the world every day. In 2013, 2, 89,000 women died during and after pregnancy and childbirth. Ninety nine percent of these deaths occur in developing countries. [1]

India has taken several steps in this regard since independence in the form of five-year plans to promote the goal of universal health. But finally in 1983 it came up with a National Health Policy which aimed at Health for all by 2000 through universal comprehensive primary health services. But it failed to achieve it because of lack of financial resources and public health administrative capacity. In 2002, it attempted a new policy framework as the National Health Policy 2002 which primarily aimed at achievement of health goals keeping in mind the prevailing socio-economic conditions. [2-6]

Though National Health Policy has set objectives keeping in mind everyone's health needs, but maternal health care needs a special attention as women are considered as the most vulnerable group in society. [7]

Health and socio-economic development of any country are interdependent. Levels of maternal mortality tell us about the risk attributable to pregnancy and child birth as well as the performance of health systems in terms of access to health care and quality of care provided. Yet the economic development in India has gained momentum over the last

decade, but the public health system is lagging behind. In Haryana, rural population accounts for 71 percent of the state's population. Haryana's per capita income is amongst the highest and fastest growing in the country. But the Anthropological Survey of India reports that the position of women in Haryana continues to be bad. Women have lagged behind in all the sectors. Haryana is the second richest state in India in per capita income but sex ratio in Haryana continues to be highly unfavourable to females. [8-9]

## Significance of Study

The study of maternal health care use in Haryana is timely because maternal mortality and morbidity still remain high in this state in spite of all the efforts made to address the healthcare needs of women of reproductive age. Secondly, not many studies have focused on Haryana State per se and not much literature is available despite unfavorable sex ratio.

## Objective of the study

The main objective of this study is to examine the differentials in utilization of maternal healthcare service i.e. antenatal services in Haryana on the basis of various socioeconomic and Sociodemographic factors.

Anderson's Behavioural Theory [10] is used as a conceptual framework for the analysis of maternal health care use based on the socio-economic characteristics as potential correlates. The Anderson behavioral model postulates that the use of maternal healthcare services is influenced by three sets of individual characteristics (a) Predisposing characteristics (i.e. age, parity, woman's education, her husband's education, woman's autonomy); (b) Enabling characteristics (i.e. household wealth, place of residence, woman's employment); (c) Need

characteristics (i.e. antenatal care, delivery care, postnatal care).

Considering the Anderson's Behavioral theory model predisposing factors are socio demographic that would predispose women to use maternal healthcare services, while the enabling factors are the socioeconomic factors that may make women prone to use healthcare services.

In this study the Aday and Anderson's model was not tested rather the association between explanatory variables (demographic and social) and utilization of maternal healthcare indicators were explored.

#### **Review of Literature**

Determinants or correlates of utilization can emanate from demand or supply side.

#### **Demand side Determinants**

Demand side determinants are individual and household level factors that affect the utilization of services.

The household socio-economic status and mother's education were the most important factors associated with the use of Antenatal Care and skilled attendance at delivery in Madhya Pradesh. [11]

Women's age at child birth appears to be a related factor to the use of maternal healthcare services. In a study based on India [12] found that mothers younger than 18 were less likely to use antenatal services compared to women above 18 years of age. While some studies such as [13] suggests that women's age can also indicate women's knowledge of healthcare services and can have a positive effect on utilization of maternal healthcare services

A study based on north-eastern states of India suggests that for better maternal health care utilization, policies should be directed towards the vulnerable group i.e. women representing the SC/ST background because high percentage of population belongs to scheduled tribes in the north-eastern states. The result showed that education of both the woman and her husband plays a vital role in utilization of maternal health care services. Other variables that can have significant impact on availing of the maternal health care services are media, autonomy enjoyed by women and their occupational status. [14]

A study based on Uttar Pradesh suggests that women's autonomy plays an equally important role in maternal health care utilization as women's educational status. The analyses show that women with greater freedom of movement are more likely to use safe delivery care and obtain higher levels of antenatal care. [15]

According to the study, [16] mother's educational level has a positive impact on utilization of maternal healthcare services. Visit of a health worker has a significant positive impact on the utilization of full antenatal and post natal care services among women. [17]

Pallikadavath [18] found that Muslim women utilized these services more than others whereas, there was low utilization of services among scheduled castes and scheduled tribes. A study observed that Muslim women give birth outside medical facilities more often than Hindu women. But nothing has clearly emerged in India on utilization of healthcare services based on religion.

Other factors such as economic status of

women of the household also affect the utilization of antenatal care services and delivery care. [19]

### **Supply Side Determinants**

Utilization of healthcare services is possible only if healthcare services are available for access. Healthcare facilities in terms of proximity and providers of healthcare play an important role in utilization of services.

A study based on Andhra Pradesh, Karnataka, Kerala and Tamil Nadu found that variations in use of services were primarily related to availability and access. [20]

This literature review has highlighted the importance of individual, household and community level factors that affect the use of antenatal services.

### **Methods**

#### *Data Source*

The present study uses the third round of the National Family Health Survey (NFHS) data which is similar to the Demographic and Health Surveys (DHS). DHS collects, disseminates national data on health and population in developing countries.

The NFHS is a large scale, multi round survey conducted in a representative sample of households throughout India. The NFHS-III was conducted in 2005-06 and is the third in the series of surveys done by Government of India. NFHS-III covers information on nationally representative sample of 1, 09,041 Households, 1, 24,385 (both married and unmarried) Women age 15-49 years and 74,369 Men (both married and unmarried) age 15-54 years from all 29 states.

#### *Study Population and Sample Size*

The present study examines the pattern of utilization of maternal health services among currently married women age (15-49) years in Haryana.

In Haryana, NFHS-III is based on a sample of 2,302 households that is representative at the state level and within state at the urban and rural levels. The study interviewed 2,790 women age 15-49 years from all sample households and 1,083 men age 15-54 from a sub sample of households for obtaining information related to population, health and nutrition in the state. The household response rate in the state as a whole was 99 percent and the individual response rates were 96 percent for eligible women and 85 percent for eligible men.

In this study data related to currently married women (15-49) years of age is examined and a total of 2134 currently married women from both rural and urban areas is included. [21-22]

#### *Measurement*

The study measures the outcome variables namely Antenatal care to explore inequities in utilization pattern of maternal healthcare services in Haryana. The selected indicator of maternal healthcare utilization and its components are examined on the basis of guidelines laid by the Ministry of Health and Family Welfare (MOHFW), Government of India and World Health Organization (WHO). The independent variables used in this study are socio-economic and socio-demographic. Predisposing Factors such as women's age at child birth, women's and their husband's education level, religion; caste, women's autonomy, mass media exposure and Enabling Factors such as place of residence, wealth index, met with ANM/community health worker and work status.

### *Statistical Methods*

Univariate analytic techniques were used to provide a description of all variables used in the analysis. The NFHS -3 dataset was used to extract information and STATA 10 was used to correctly estimate population means, proportions and standard deviations. [23]

To identify factors associated with maternal healthcare utilization, bivariate and multivariate analyses were performed.

Multivariate analyses were performed to examine the nature of predictor variables and their relative contribution in explaining the dependent variables. Since both outcomes in this analysis are dichotomous in nature, logistic regression was used to predict the association between the dependent variables and the independent variables.

Before running the analysis, the models were checked for multicollinearity using the variance inflation factor (VIF). The VIF measures how much of the variance of the coefficient estimate is being by multicollinearity.

### **Analysis**

#### *Profile of the Respondents*

Table 1(Appendix B) shows the percentage of women (15-49) years of age who had at least one live birth during the last five years preceding the survey by selected background characteristics. Majority of women were above 18 years of years. With regard to education, 46% of women had no education but 57% of Husband's were educated till secondary level. Most of the women 88% were Hindu. As per the social group most women were from other backward classes (OBCs), around 63% women enjoy high autonomy and 74% have exposure to any of the mass media. Most of the women are not working and residing in rural areas.

24% and 29% of women fall in middle and richer wealth index respectively. 92% of women had not met any health worker in the past three months.

#### *Differentials in Utilization Pattern of Antenatal care Services*

This section identifies the factors associated with the utilization of antenatal care, services; we examined the bi-variate differential of the selected socio economic and demographic characteristics. This was done by finding the association between predisposing and enabling factors and the use of antenatal services. Chi- square statistics are used for differences in distribution of predisposing and enabling factors among women (15-49) years of age who had at least one live birth in last five years utilizing antenatal care services

Table 2 (Appendix C) shows the percentage of women who utilized antenatal care services by selected background characteristics. The pattern of utilization of antenatal care is high for women who are above 18 years of age. Women who are not working and enjoy more autonomy and have any mass media exposure utilize antenatal care services more. On the other hand, women with no education utilize these services more. Rural women who have not met any health worker in past 3 months take more antenatal care. Women belonging to other social groups and richest wealth quintile utilize these services more than women belonging to other castes and lower wealth quintiles.

#### *Determinants of Antenatal care Utilization*

Table 3 (Appendix D) shows the results of multivariate analysis of antenatal care among women (15-49) years of age who had at least one live birth during the past five years. The significant determinants for antenatal care used in the analysis are woman's age at child

birth, woman's education level, her husband's education level, mass media exposure, autonomy, wealth, place of residence, meeting with a health worker, work status, religion and caste.

Women less than 18 years of age, women with no education, husbands with no education, women belonging to Hindu religion, women belonging to other social groups, women who are not working, women who have low autonomy, women who have no mass media exposure, women belonging to poorest wealth index, women residing in urban areas and women who have not met any health worker in past 3 months are taken as reference category.

Women who are not adolescents i.e. above 18 years of age tend to utilize antenatal care services two times more than adolescent women. Woman's education level primary, secondary or higher did not show any significant increase in utilization of antenatal services in comparison to woman with no education. The odds of receiving antenatal care were high for women whose husbands had secondary or higher level of education in comparison to women whose husbands had no formal education. There was no significant difference in utilization of antenatal care services for Muslim women but odds for receiving services were higher for Sikh women. The odds of receiving antenatal care were highest for women belonging to other backward classes in comparison to women belonging to scheduled caste or scheduled tribes. Work status of women had positive effect on utilization of antenatal care services. Woman's autonomy did not have any significant effect on utilization of antenatal care services.

The result indicates that women who had any exposure utilize these services more than women with no exposure. Wealth index showed a notable effect on the utilization of antenatal care services. Women from richer and richest index are nearly two and four times more likely to utilize these services respectively compared to women belonging to poorer and middle wealth quintile. Women residing in rural areas did not show any significant increase in utilization of services than women staying in urban areas. Women who have met with a health worker in last three months did not suggest any increase in utilization of antenatal care services in comparison to women who have not met with a health worker in last three months.

The analysis suggests that significant factors affecting utilization of antenatal care services among women 15-49 years of age who had at least one live birth in last five years are woman's age, wealth index, husband's education, media exposure, woman's work status, caste and religion.

#### *Practice Implications*

This study examined differentials in the use of maternal health care services namely antenatal care in Haryana on the basis of various socio-economic factors such as woman's age at child birth, woman's education level, her husband's education level, mass media exposure, autonomy, wealth, place of residence, meeting with a health worker, work status, religion and caste. The relationship between outcome variable and predisposing and enabling factors is based on Anderson's model. The data was analyzed to find the relationship between predisposing and enabling factors and the outcome.

Bivariate analysis of antenatal care utilization with predisposing and enabling factors show several patterns.

Women who are not adolescents i.e. above 18 years of age tend to utilize antenatal care services two times more than adolescent women i.e. below 18 years of age. A study based in rural north India [18] also explain that age at marriage was positively associated with access or attendance for ANC. Antenatal check-ups were more likely among women whose age at the time of marriage was 19 years or above as compared to those women who married at younger age.

The odds of receiving antenatal care were high for women whose husbands had secondary or higher level of education in comparison to women whose husband had no formal education. This also conforms to another study that shows husband's education was a statistically significant predictor in Andhra Pradesh but not in Karnataka. [20] The odds of receiving antenatal care were highest for women belonging to other backward classes in comparison to women belonging to scheduled castes or scheduled tribes. The low utilization of maternal health care among certain groups shows the lack of access to health care services among socially backward communities. This was demonstrated by another study based on rural Hindu women in Maitha, Uttar Pradesh which suggests that majority of Dais, untrained TBA's belong to the lower caste and trained TBA's belong to upper caste. Because of class discrimination and to avoid physical contact at the time of service with lower caste women Trained TBA's only cater to upper caste women. [24]

Women from richer and richest index are nearly two and four times more likely to utilize these services respectively compared to

women belonging to poorer and middle wealth quintile. Household economic status has a positive impact on use of ANC. This is proved by a study that women with high economic status were more likely to receive adequate and early ANC than those with low economic status. [25]

Efforts need to be made at community as well as household level to improve maternal health care services.

At community level, there should be call for action to reduce financial barriers while increasing awareness about the maternal healthcare services, particularly among women belonging to low wealth quintile. Efforts should be put to educate the men about the importance of maternal health care services. There should be more schemes for scheduled castes, scheduled tribes and other backward classes. Not just the literacy, there should be overall development of women. They should be exposed to newspapers, radio, television etc. the most important indicator of maternal health care is antenatal care as delivery care and post natal care are linked to this indicator. So, more emphasis should be laid on improvement of antenatal care services. At Household level, husband and mother in law should be used as targets for messages. There should be pregnant women groups and some incentive-based competition among mothers to be model mother who can set an example for other mothers.

Health is a social phenomenon whose determinants cannot be separated from other social and economic determinants. Haryana has progressed at some fronts, but still large gaps persist between the need and provision of services. It will require monitoring and evaluation of ongoing programs and effective implementation.



Health services no matter how efficient cannot change the condition of the marginalized people unless they are helped to become self-reliant and the root problems are addressed. People who are poor and illiterate are like uncut gems hidden under the dirt and stone. Given the opportunity, they can reach their full potential and live as responsible, sensitive human beings, possessing self – reliance and the liberty to shed those old customs and traditions that impede health and development. [26]

### **Limitations of the study**

The study had some limitations, which need to be considered while interpreting the results.

1. The study used the data from a cross sectional survey and the association between explanatory variables and the indicator of the use of maternal health services was examined, could not draw conclusions about causality.
2. Some correlates of maternal health care utilization are missing from our analysis such as distance of health facilities from the locality of residence, and this could have influenced the patterns of utilization of maternal health services. Since data on this variable was not available in the survey.

### **Future Scope of Study**

Further on, the other components of maternal healthcare services such as delivery care and postnatal care can be examined based on the various socioeconomic and Sociodemographic variables.

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## Appendix A

### Measurement

#### Dependent Variables

The study measures the outcome variables namely Antenatal care to explore inequities in utilization pattern of maternal healthcare services in Haryana. The selected indicator of maternal healthcare utilization and its components are examined on the basis of guidelines laid by the Ministry of Health and Family Welfare (MOHFW), Government of India and World Health Organization (WHO). For this study, Antenatal care includes those women who had a minimum of three antenatal care visits. The MOHFW recommends that a woman should have at least three antenatal care visits during pregnancy and this standard was used to construct this dependent variable. In this study, **Antenatal care** was coded as a binary dependent variable, with a value of 1 if the woman had at least three antenatal visits and a value 0 if the woman had less than three antenatal care visits.

#### Independent Variables

The independent variables used in this study are socio-economic and socio-demographic.

#### Predisposing Factors

**Women's age at child birth** is defined as women's age in years. A variable was created (womanaage). Womanaage was coded as 0 if **women's age** was less than 18 years and was coded as 1 if women's age is greater than 18 years.

**Women's and their Husband's education level** are defined using highest education level. Variables Womeneduc and Husbandeduc were created and were categorized into 0,1,2,3. It was coded as 0 if they had no education, coded as 1 if the woman had studied till primary,

coded as 2 if till secondary and coded as 3 if till higher level of education.

**Religion** of the woman was categorized as Hindu, Muslim, and Sikh. Religion was coded as 0 if Hindu, coded as 1 if Muslim and coded as 2 if Sikh.

**Caste** is defined according to the social group that woman belongs to as per the categorization and identification done in NFHS-3 data. Variable caste is coded as 0 if women belong to none of them, coded as 1 if women belong to scheduled castes (SCs), coded as 2 if women belong to scheduled tribes (STs) and coded as 3 if women belong to other backward classes (OBCs).

**Women's Autonomy** was computed by taking into account decision making and women's mobility. Decision making was computed on the basis of decision about healthcare for yourself, decision about making major household purchases, decision about making purchases for daily household and decision about visits to your family or relatives. These four factors were combined and were coded as 0 if respondent and respondent plus husband take decisions and were coded 1 if someone else is taking decision on respondent's behalf. Women's mobility was computed by taking into account following factors whether women is allowed to go to market, allowed to go to health facility, allowed to visit places outside the village/community. These three factors were combined and were coded as 0 if women were allowed to go alone or with someone else and were coded as 1 if they were allowed to go anywhere. Both decision making and women mobility were combined to construct a variable wautonomy using information from NFHS-3 data. Wautonomy was coded as 0 if women were allowed to go out and were involved in decision making and was coded as 1 otherwise.

**Mass media exposure** was computed by taking into account how often respondents read magazine, listen to radio and watch television. They were coded as 0 if they don't read magazine, listen to radio and watch television and coded as 1 otherwise. All three factors were combined to create variable media and then from media we created media exposure and coded it as 0 if they had no exposure and coded as 1 if they had some exposure.

### Enabling Factors

**Place of residence** is defined as the place of stay. It is coded as zero if the woman stays in urban area and is coded as 1 if woman stays in rural area.

**Wealth index** is defined as woman falls into which category (poorest, poorer, middle, richer and richest) and this categorization is taken from NFHS-3 data. Poorest is coded as 0, poorer as 1, middle as 2, richer as 3 and richest as 4.

**Met with ANM/Community health worker** is defined as whether in last 3 months woman has met any ANM/Community health worker. It is coded as 0 if not met and coded as 1 if otherwise.

**Work status** is defined whether the woman is working or not. If the woman is not working it is coded as 0 and 1 otherwise.

### Appendix B

**Table 1 Percentage of women (15-49) years who had at least one live birth during the last five years preceding the survey by background characteristics, NFHS-3(2005-06)-Haryana**

Background characteristics	N (Number)	%(Percentage)
<b>Woman's age</b>		
Less than 18 years	31	1.45
Greater than 18 years	2,103	98.55
<b>Woman's education</b>		
No Education	966	45.27
Primary	278	13.03
Secondary	758	35.52
Higher	132	6.19
<b>Husband's education</b>		
No Education	442	20.74
Primary	223	10.46
Secondary	1,225	57.48
Higher	241	11.31

<b>Religion</b>		
Hindu	1891	88.78
Muslim	125	5.87
Sikh	114	5.35
<b>Caste</b>		
Others	1,181	55.39
Scheduled Castes(SC's)	488	22.89
Scheduled Tribes( ST's)	14	0.66
Other Backward Classes (OBCs)	449	21.06
<b>Work Status</b>		
Non- Working	1646	77.13
Working	488	22.87
<b>Autonomy</b>		
Low	794	37.21
High	1,340	62.79
<b>Media Exposure</b>		
No exposure	557	26.10
Any exposure	1,577	73.90
<b>Wealth Index</b>		
Poorest	72	3.37
Poorer	243	11.39
Middle	522	24.46
Richer	611	28.63
Richest	686	32.15
<b>Place of residence</b>		
Urban	553	25.91
Rural	1,581	74.09
<b>Met with health worker in last 3 months</b>		
No	1,948	91.28
Yes	186	8.72

Note: all N are unweighted.

## Appendix C

**Table 2: Percentage of women (15-49) years who had at least one live birth during the last five years preceding the survey by antenatal care utilization, NFHS-3(2005-06)-Haryana**

<b>Background characteristics</b>	<b>%(Percentage)</b>
<b>Woman's age</b>	(0.0005) <sup>ns</sup>
Less than 18 years	1.45
Greater than 18 years	98.55
<b>Woman's education</b>	(19.5009) <sup>***</sup>
No Education	43.45
Primary	13.33
Secondary	36.33
Higher	6.86
<b>Husband's education</b>	(41.9035) <sup>***</sup>
No Education	18.72
Primary	9.78
Secondary	59.27
Higher	12.23
<b>Religion</b>	(130.1645) <sup>***</sup>
Hindu	90.83
Muslim	3.35
Sikh	5.81
<b>Caste</b>	(5.4949) <sup>ns</sup>
Others	56.47
Scheduled Castes(SC's)	22.27
Scheduled Tribes( ST's)	0.61
Other Backward Classes (OBCs)	20.65
<b>Work Status</b>	(0.4906) <sup>ns</sup>
Non- Working	76.85
Working	23.15
<b>Autonomy</b>	(16.1469) <sup>***</sup>

Low	39.04
High	60.96
<b>Media Exposure</b>	(48.9195)***
No exposure	23.20
Any exposure	76.80
<b>Wealth Index</b>	(113.5240)***
Poorest	2.40
Poorer	9.54
Middle	23.20
Richer	29.39
Richest	35.47
<b>Place of residence</b>	(22.7386)***
Urban	22.89
Rural	72.11
<b>Met with health worker in last 3 months</b>	(11.6243)***
No	92.19
Yes	7.81

Note: Figures in parentheses are chi-square statistics; this test was applied for each variable  
 Level of significance: \* $p < .10$ ; \*\* $p < .05$ ; \*\*\* $p < .01$ ; ns: not significant

## Appendix D

**Table 3: Logistic Regression showing odds ratio and 95 % confidence interval for receiving antenatal care among women (15-49) years who had at least one live birth during the last five years preceding the survey, NFHS-3(2005-06)-Haryana**

<b>Covariates</b>	<b>Odds ratio</b>	<b>95 % CI</b>
<b>Woman's age</b>		
Less than 18 years*	1.000	
Greater than 18 years	2.960652	.8845427 – 9.909596
<b>Woman's education</b>		
No Education*	1.000	
Primary	.7815156	.5120718-1.192736
Secondary	.515813	.3600605-.7389399
Higher	.5653594	.2354061-1.357787
<b>Husband's education</b>		
No Education*	1.000	
Primary	0.9005271	.5834772- 1.389855
Secondary	1.220119	.8529871 – 1.745267
Higher	1.199789	.6283673 – 2.290846



# Does Consultation Time Influence Patient Perception of Provider Communication Style, Patient Satisfaction And Word of Mouth Recommendation In India? A Mediation Analysis

PAYAL MEHRA

Communication IIM Lucknow Prabandhnagar Off Sitapur Road, Lucknow 226024, India

Correspondence: [payal@iiml.ac.in](mailto:payal@iiml.ac.in)

## Abstract

**Background** In medically underserved developing countries such as India, the length of the consultation is often compromised; providers, it appears, have lost their natural empathetic tendencies and try to substitute talk with techniques and procedures. Despite this, surprisingly, patient satisfaction is high in India. This raises questions on the importance of understanding how patients feel about the clinical consultation length and the way it affects their satisfaction. In this context, this study analysed if the time spent with the patient predicted different changes to patient satisfaction with the provider and word of mouth recommendation.

**Methods** This cross sectional study comprised a sample of working Indian adults (N=501), completing communication competence measures and indicating their satisfaction and word of mouth recommendation potential. The four step Baron and Kenny's model of mediation analysis, apart from the GLM and factor analysis, was used for the analysis.

**Results** Findings showed that the communication style of the providers positively influenced the health outcomes such as patient satisfaction and word of

mouth recommendation, and the length of direct consultation time mediated this relationship. Gender wise, male patients were more likely to complain about poor communication competency of the providers and less consultation time than female patients

**Conclusion** We conclude that patients positively associate a longer clinical consultation time with empathetic and competent providers and be willing to recommend him/her to others. However due to extreme paucity of qualified providers in India, patients generally ignore or suffer problems related to time or communication style.

**Keywords:** Patient satisfaction, India, Consultation length, Outpatient clinics, Communication style, Word of mouth

## 1.0. Introduction

Patient provider communication is the core of health care service. Poor communication results in missed opportunities for both patient and provider. [1] Poor patient-provider communication is evident when patients with chronic health issues failed to use their prescriptions and do little to communicate the same to their physicians. [2,3] One research pointed out those providers appeared to have lost their natural empathetic tendencies and (were) inclined to substitute techniques and procedures for talk. [4]

In India, patients far outnumber the providers, and providers end up compromising on the quality of the communication to serve the long queues in the waiting area of the outpatient clinic. The health sector in India faces an acute shortage with only approximately 1.54 million doctors and 2.4 million nurses to match the global average. [5]

## 2.0. Literature Review

In their review of literature on doctor-patient communication Fong Dip and Longnecker conclude that in reality doctors overestimate their proficiency in communication. [6] Citing doctors' avoidance behavior, discouragement of collaboration, and patient resistance as the chief barriers to an effective doctor patient communication, the authors recommend large scale communication skills training of doctors to remedy the issue.

Researchers have also questioned the social interaction model whereby a patient should not evaluate the quality of medical care solely on the basis of the doctor's communication style. Proposed by Ben-Sira it assumes that the rational thinking patient will care about the doctor's communication style only if he/she is diagnosed with a serious illness, when visiting

the doctor for the first time, or more importantly, when he/she is given less consultation time. [7] This viewpoint was widely criticized by Buller and Buller. [8] The latter report that greater time spent did not imply more number of satisfied patients.

In their reinterpretation of past models of doctor patient interaction, Agarwal and Murinson propose a new model of communication, thereby representing a significant shift from the traditional modes of communication. [9] Understanding that the patient today is more informed and somewhat better equipped with medical knowledge, their model exhorts the doctors to be more mindful of effective communication for overall patient satisfaction.

Studies show that a patient's in-clinic experience was vastly improved when providers demonstrated empathy and active listening skills. [10,11,12,13] For example, Roter (2000) described effectiveness of provider communication skills as being akin to a 'therapeutic' experience; small talk and informal conversations boosted the patients' sense of participation and encouraged them to ask open-ended questions. [14,15,16,17]

In a similar study, Flocke, Miller and Crabtree (2002) tested different interaction styles with respect to primary care and the duration of the visit, and concluded that satisfied patients reported that their providers were more people-focused as they granted them the longest visits.[18] Studies also revealed that when providers bypassed verbal and vocal clues provided by the patients, the in-clinic discussion became less patient-centered and more authoritarian in nature. [19]

Extant research has sought to link consultation time, patient satisfaction, and patient-provider interaction. [20] Results are mixed in this

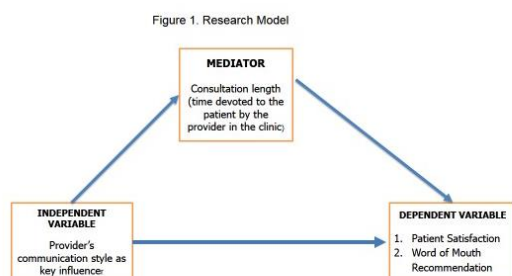
regard. While longer consultation time was associated with enhanced communication and patient satisfaction in some studies, other studies such as one by Buller and Buller (1987) show that patients respond poorly to extended consultation time. [21,22,23,24,25]

## 2.1. Research Objective

In view of the contradictory research opinions above, it makes sense to examine the role of consultation length and its mediating effects on the relationship between the communication style of the provider and the dependent (outcome) variables (patient satisfaction, and positive word of mouth recommendation) in the context of a medically underserved country.

Based on the literature review, a hypothesized model was developed where communication style was defined as the main independent variable of the study (see Figure 1). The two dependent variables were operationalized by a single question on an 11-point scale: Are you satisfied with the provider? Will you recommend the provider to others? Consultation length was treated as a mediator between communication style and patient satisfaction.

The hypothesized research model is presented below:



**Figure 1: The Hypothesised Research Model**

## 3.0. Methods

Based on the above, two goals were defined: a) to test the contribution of communication style of the provider as a predictor of patient satisfaction; b) to test whether the length of consultation time mediated the relationship between communication style and patient satisfaction.

**3.1 Study site.** This study was conducted in Lucknow, located in Uttar Pradesh state of North India. It has a population of 212,744,738 with a literacy rate of 67.68% (visit <http://www.uttarpradeshstat.com/health/16/allopathy/29091/healthcentres19812016/449461/stats.aspx>). As of date, the state has 3692 operational PHCs (primary healthcare centres) with 2861 doctors.

**3.2. Participants and procedures.** A cross sectional survey of 505 patients was carried out in 33 select outpatient clinics and hospitals using the exit interview method duly following the research protocol of obtaining the permission of the providers and the patients. Statistical analysis was performed using the Factor analysis, General Linear Model and Mediation tests.

**3.3 Study design and data collection.** The patients were asked to answer a questionnaire with clinical, socio-economic, demographic information and communication and related assessment items in a structured interview using a Likert-type scale. The length of the consultation time was measured by giving five options to the patients (5-10 minutes; 11-15 minutes; 16-20 minutes; 21-25 minutes; 26 minutes and above). A pilot study of the first 100 patients was conducted where few repetitive and leading questions were deleted.

**3.4 Characteristics of the sample.** The sample comprised 52 % male and 48 % female

Does consultation time influence patient perception of provider communication style, patient satisfaction and word of mouth recommendation in India? A mediation analysis

patients. 18% patients were first time visitors. Close to 53% were consulting the provider on recommendation from a known person. 74%

patients were from urban localities, while 26 % came from the surrounding rural districts and villages. 50% of the patients required treatment for chronic illnesses, and 50% for acute illnesses or injury. 48 % stated that less

than 15 minutes' consultation time was allotted to them (this included 18 % of the patients who said that their consultation time was less than 10 minutes). Only 2% of the providers used email to fix appointments and schedule visits. Table 1 depicts the descriptive analysis of time spent with the provider and outcome analysis (patient satisfaction and words of mouth recommendation)

**Table 1: Descriptive analysis: time spent with the provider and outcome analysis**

Item description	Time spent with the provider, in minutes, in a single interaction		N	Mean score	Std. Deviation	F	Sig of the ANOVA
I would surely recommend the provider	1.00	0-5	63	6.7778	2.01162	22.305	.000
	2.00	6-10	36	8.1389	1.67593	27.230	.000
	3.00	11-15	158	8.2911	1.65227	81.988	.000
	4.00	16-25	241	8.7303	1.23738	2.411	.000
	5.00	>26	7	9.7143	.95119		.066
	Total	505		8.3208	1.64029		.000
I am wholly satisfied with the provider	1.00	0-5	63	6.4603	2.08548	28.985	.000
	2.00	6-10	36	8.1389	1.58840	24.028	.000
	3.00	11-15	158	8.3481	1.39118	99.740	.000
	4.00	16-25	241	8.6680	1.29332	5.400	.000
	5.00	>26	7	9.1429	1.86445		.000
	Total	505		8.2614	1.62782		.000

Provider means the Doctor. Measured on an 11-point scale. ANOVA is significant at  $p < .05$

**3.5 Measures.** Factor Analysis and Mediation Analysis. SPSS v16 was utilized for the statistical analysis of the results. The Factor analysis yielded two components: The provider's communication style and expertise (which included empathy, response to questions, listening ability, clarification of doubts, summarizing ability, additional information and explanation, attention and eye contact) and the 'health system infrastructure component' (reputation gained from availability of state-of-the-art medical facilities, seating space, and presence of a computerized environment at the clinic).

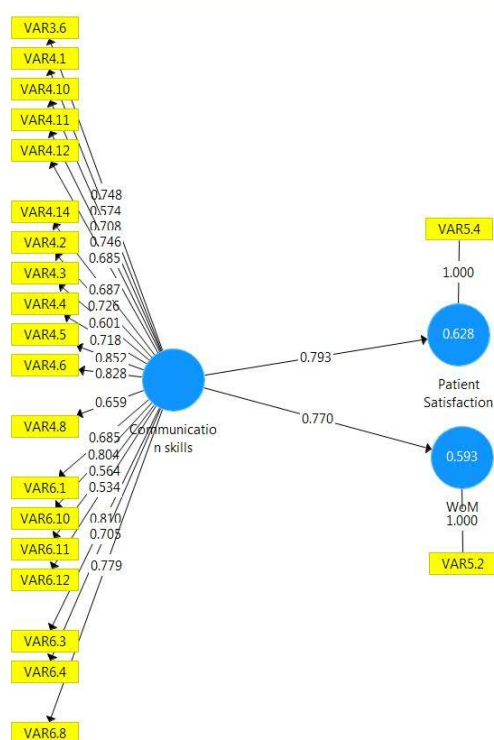
Thereafter, the General Linear Model (GLM), also known as the MANOVA, was conducted to identify the key variables that contributed the most to the model; this in turn, was utilized to test the Mediation hypothesis.

The GLM was controlled for gender (Supplementary Data Tables S1 and S2). Results of the GLM show that the value of the Wilks lambda was the lowest and that the value of the Hotelling trace was the highest in the case of the core competence of the provider ( $p$  value  $< 0.05$ ). This indicated that that only Factor 1, the 'provider's core competence' contributed significantly to the

## Does consultation time influence patient perception of provider communication style, patient satisfaction and word of mouth recommendation in India? A mediation analysis

model. Therefore, only Factor 1 could be used for the mediation tests (Supplementary Data Tables S1-S5).

**3.6 Model estimation and results for determining reliability and validity.** A partial least square (PLS) approach was used to test the validity of the proposed model and the hypotheses [26] (Hair et.al.,2014). PLS is recommended when structural model is complex and assumptions about normality of data are not required. The measurement model was evaluated by assessing the composite reliability and convergent validity. Figure 1.1 indicated the measurement model for this research.



**Figure 1.1: The measurement model**

The outer loadings of the constructs were found to be statistically significant (see supplementary files for details on variables). The value of Cronbach's alpha was high (0.945), and above the 0.6 cut off rate

prescribed by Nunnally and Berstein. [27] Internal consistency was measured by the composite reliability value, which was 0.950 (above the acceptable lower limit of 0.7).

To validate the model, the convergent validity approach was selected. The results of the measurement model show that the factor loadings exceeded the recommended value of 0.5 and that the composite reliability (CR) value was above 0.7. The AVE values were above the recommended value of 0.5 (27) and hence the convergent validity of the communication and expertise construct was established.

## 4.0 Results

### 4.1 Factor Analysis and the General Linear Model (GLM).

The Factor Analysis and the General Linear Model (GLM) identified the key factors that contributed the most to the model, and these, in turn, were utilized to test the Mediation hypothesis (see Table 2). Patients rated two factors as most important: The provider's 'core competence' component (provider expertise

and communication style) and the 'health system infrastructure component' (reputation gained from availability of state-of-the-art medical facilities, seating space, and a computerized environment at the clinic).

**Table 2: General Linear Model: results of multivariate tests to test which factor contributes most to the model**

Effect		Value	F	Hypothesis df	Error df	Test of significance.
Intercept	Pillai's Trace	.972	8.545E3 <sup>a</sup>	2.000	500.000	.000
	Wilks' Lambda	.028	8.545E3 <sup>a</sup>	2.000	500.000	.000
	Hotelling's Trace	34.179	8.545E3 <sup>a</sup>	2.000	500.000	.000
	Roy's Largest Root	34.179	8.545E3 <sup>a</sup>	2.000	500.000	.000
FAC1_1 Core competence of the provider	Pillai's Trace	.551	3.069E2 <sup>a</sup>	2.000	500.000	.000
	Wilks' Lambda	.449	3.069E2 <sup>a</sup>	2.000	500.000	.000
	Hotelling's Trace	1.227	3.069E2 <sup>a</sup>	2.000	500.000	.000
	Roy's Largest Root	1.227	3.069E2 <sup>a</sup>	2.000	500.000	.000
FAC2_1 Health system and infrastructure	Pillai's Trace	.291	1.025E2 <sup>a</sup>	2.000	500.000	.000
	Wilks' Lambda	.709	1.025E2 <sup>a</sup>	2.000	500.000	.000
	Hotelling's Trace	.410	1.025E2 <sup>a</sup>	2.000	500.000	.000
	Roy's Largest Root	.410	1.025E2 <sup>a</sup>	2.000	500.000	.000
VAR6.13	Pillai's Trace	.004	.898 <sup>a</sup>	2.000	500.000	.408
	Wilks' Lambda	.996	.898 <sup>a</sup>	2.000	500.000	.408
	Hotelling's Trace	.004	.898 <sup>a</sup>	2.000	500.000	.408
	Roy's Largest Root	.004	.898 <sup>a</sup>	2.000	500.000	.408

a. Exact statistic

b. Design: Intercept + FAC1\_1 + FAC2\_1 + VAR6.13; Kaiser-Meyer-Olkin Measure of Sampling Adequacy=0.868; Sig. 0.000.; R Squared = .615 (Adjusted R Squared = .613)

Except for factor 1, the value of the Wilks lambda was too high, indicating that only Factor 1, the 'provider's core competence' component contributed significantly to the model. Results also illustrated that the Hotelling

trace was the highest in the case of the core competence of the provider, and the p value was less than 0.05. The results suggested that Factor I could be used for the mediation tests

The four steps [28] Baron and Kenny (1986) model was used to assess the possibility of mediation and it confirmed the presence of full mediation. Thus, the null hypothesis was rejected, and consultation length fully

mediated the relationship between provider competency and word of mouth recommendation and patient satisfaction (Figure 2)

#### 4.2. Mediation analysis

**Figure 2: Results of the mediation analysis**

Does consultation time influence patient perception of provider communication style, patient satisfaction and word of mouth recommendation in India? A mediation analysis

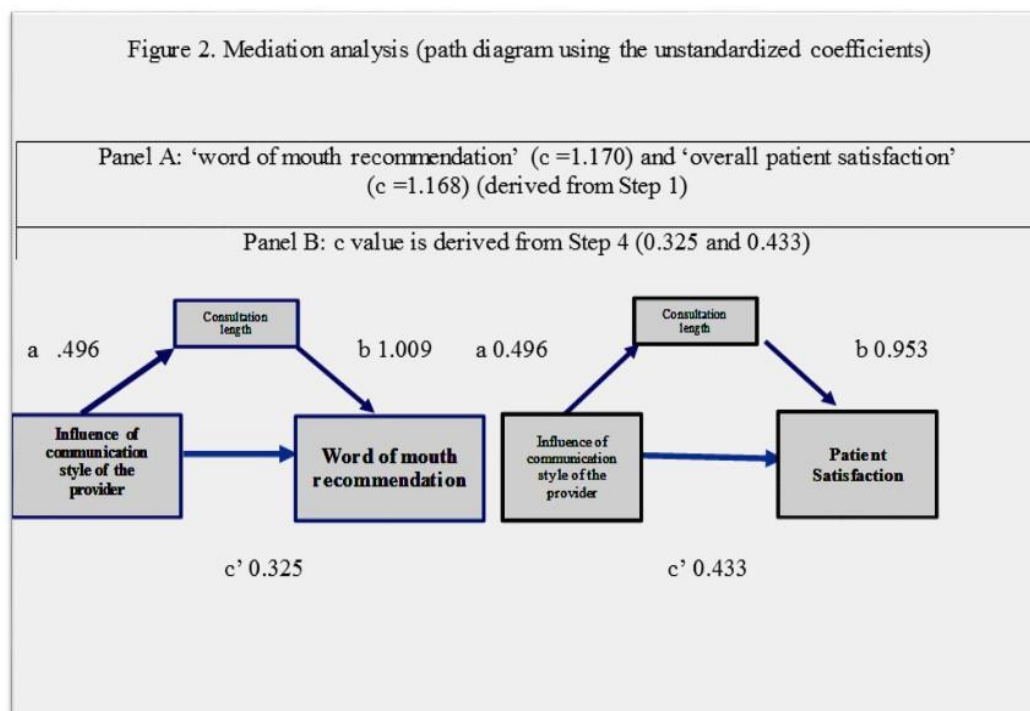


Table 3: Results of the 4-step mediation analysis

	Total effect of consultation time	Direct effect	Mediated effects: The product of the Unstandardized estimates of the path coefficients ab	The product of the standardized estimates of the path coefficients ab	Conclusion
<b>Total Effect</b>	c = 1.007				Full Mediation
<b>Patient Satisfaction</b>		C <sup>1</sup> = 0.433	ab <sup>1</sup> =0.496 × 0.953 = 0.470	ab = 1.170 x .953= 1.180	Reason: The null hypothesis H0: ab = 0 using the unstandardized coefficients is rejected. Both products are greater than 0.00
<b>WOM</b>		C <sup>2</sup> = 0.325	ab <sup>2</sup> =0.496 × 1.009 = 0.500	ab = 1.168 x 1.009 = 1.110	

4.3 Mediation analysis steps.

First, a regression was run to predict word of mouth recommendation and patient satisfaction from the influence of communication competence of the provider.

Both, word of mouth recommendation and overall patient satisfaction were statistically significant (see Table 3)

In step 2, the mediator was used as the independent variable and both the dependent variables as dependent variables. A regression

was performed to predict the consultation length from the influence of communication competence of the provider. Following this, a regression analysis was performed to predict the mediating variable (consultation length) from the causal variable (influence of communication competence of the provider on the patient). Finally, a regression analysis was performed to predict the outcome variable (patient satisfaction and word of mouth recommendation) from both the communication competence of the provider, and the consultation length (see Supplementary tables S1-S4 in the appendix for detailed test results).

Mediation analysis effected partitioning of influencing factors in that it partitioned the total effect of empathy and expertise on word of mouth recommendation and satisfaction into a direct effect and a mediated effect. It also partitioned the total effect of influence on word of mouth recommendation into a direct effect and a mediated effect. In addition, it partitioned the total effect of the influence of provider's communication competence on overall patient satisfaction into a direct effect and a mediated effect. Both these were evaluated in terms of standardized/unit-free path coefficients. The unit-free index of strength of the mediated effect (the effect of influence of provider's communication competence on word of mouth recommendation and overall satisfaction at the outpatient clinic through the mediating variable i.e., consultation length), is given by the product of the standardized estimates of the path coefficients  $ab$ . For each increase in influence of provider's communication competence, an increase in word of mouth recommendation and patient satisfaction is predicted.

The strength of the direct or non-mediated

path from influence factors to recommendation and satisfaction corresponded to  $c'$ . In other words, for a one-standard deviation increase in influence of provider's communication competence, a 1.009 increase in word of mouth recommendation was predicted through the mediating variable, namely, the consultation length. In addition, a 0.496 increase in word of mouth recommendation was predicted due to the direct effects of the influence factors (effects that were not mediated by consultation length); this corresponded to the  $c'$  path. The total effect of influence factors on word of mouth recommendation corresponded to path  $c$ , and the unstandardized coefficient for path  $c$  was 0.325.

For the unstandardized coefficients of the overall satisfaction, this product was 0.470. In other words, for a one-standard deviation increases in influence of provider's communication competence, a 0.953 increase in patient satisfaction was predicted through the mediating variable namely, consultation length. In addition, a 0.496 increase in patient satisfaction, due to direct effects of the influence factors (effects that were not mediated by consultation length), was predicted, and corresponded to the  $c'$  path. The total effect of influence of provider's communication competence on patient satisfaction corresponded to path  $c$ , and the unstandardized coefficient for path  $c$  was 0.433 (see Figure 2)

## 5.0 Discussion

In this empirical study, evidence indicates that longer consultation length positively influenced the relationship between communication style of the provider and patient satisfaction and word of mouth recommendation. Patients who reported a higher consultation time were also more satisfied with the communicative



competence of the providers indicating the importance of chat. Conversely, patients satisfied with the communication style of the patients but given less consultation time expressed lower satisfaction, as well as decreased word of mouth recommendation. Patients associated enhanced consultation time with empathy and support in decision making.

Predictably, patient satisfaction, measured on a global scale, was reasonably high, and a large majority of the patients reported that they would recommend the provider that they were consulting. The effect of influence of provider's communication competence on patient satisfaction, in statistical terms, was 'a = 1.170' and '1.165' and was significant based on the t test. This implied that it was possible to predict when an increase in expertise and communication competency would increase patient satisfaction and word of mouth recommendation. This is a crucial finding that would be of clinical importance.

For the unstandardized coefficients, the product for word of mouth communication was 0.500. When the mediating variable weight was statistically controlled/taken into account, the direct effect of provider's communication competence as a determinant of patient satisfaction, was represented by 0.325 and 0.433 respectively. This implies that communication competence of the provider positively influenced the length of consultation, leading to greater satisfaction with the provider. The b coefficient, which represented the effects of the influence of the provider's communication competence on overall satisfaction, was 0.953, and was statistically significant. Thus, an increase in the provider's communication competence could result in a fair amount of increase in patient satisfaction.

The patients, in general, reported that the providers had (i) clarity; (ii) advisory skills; (iii) listening skills, and (iv) ability to reassure patients. The patients also noted that the providers (could have, but) did not (i) engage in small talk and informal chat; (ii) cross question them; (iii) give additional information, and (iv) assist them in decision making on a possible course of action. Patients from rural areas asked fewer questions, and inclined to be greatly influenced by the controlling style the provider. Patients from urban areas were more articulate and expected the provider to reciprocate for long waiting times. These findings also reflect the findings of Roter (with respect to communication skills) and also of Flocke, Miller, and Crabtree. However, less consultation time was a determinant of low satisfaction contradicting the findings of Roter who had stated that consultation time did not affect patient satisfaction.

In terms of gender, the male provider influenced the male patients to a lesser extent, even as the male providers recorded less waiting time than female providers did. This is attributed to the fact that more number of illiterate patients and rural patients consulted the male providers, who in turn tend to exert a controlling communication style over these patients. This could possibly be the reason why male providers engaged less in advising, clarifying, soliciting information and giving support to assist patients in medical decision-making. In terms of dyadic communication, male providers were more empathetic with female patients, possibly because more urban females visited male providers

The research is important for providers for two reasons: first for the provider to understand the important role of communicating effectively with the patients. As patients get to be more technologically savvy and more urbanized, they

start expecting better services from outpatient and primary care health centers. The second reason is tied up with the first-to understand the importance of giving adequate time to the patients. Currently providers are rushing from one nursing home or hospital to the other, ignoring the hope of addressing the requirements of the patients sitting in front of them. Providers need to be sensitized to the needs and wants of the patients (both rural and urban) and to revisit the service paradigm of healthcare profession

The research is not without its limitations. The first relates to the nature of the study. A cross sectional study does not always give a complete picture of the responses of the patients since it

is conducted at a point of time; its validity therefore cannot be established fully. The second relates to the assessment of demographic variables on the results. While the mediation tests do control for gender, there are other demographic variables that could affect the findings. These include place of residence-rural or urban, as well as education level of the patients.

Researchers interested in this field might like to explore the impact of consultation time in developed nations and compare the findings; they could also investigate issues relating to the impact of time in general-both consultation time as well as waiting time.

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## DECLARATIONS

### Ethics and Consent to Participate

This research work was carried out in consonance with the seed money guidelines issued by the institution, viz., IIM Lucknow, INDIA. The awarding body is known as the 'Research Committee' and it is charged with the authority to issue statement of consent for conducting the study involving human participants and also with the consent to publish

### Name of Ethics committee present

The Ethics committee is known as the 'Research Committee' in the institute. It is the approving body for faculty seed money grants This project was under the aegis of the seed money scheme for Participating faculty (No: SM-197)

### Competing Interest

There are no competing interests to report

### Author's contributions

This submission is submitted by a single author

### Availability of data and materials

The supporting materials are embedded in the files submitted in the Editorial Manager. The file is labelled as 'Datasets'

### Informed consent

Informed consent was obtained from all individual participants included in the study. Formal permission was taken from all the providers at the Outpatient clinics

### Acknowledgments

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# The Impact of Shared Versus Individual Office Space On Therapist Appraisal of Their Work Environment

SHANE L. ROGERS, STEPHEN J. EDWARDS, REBECCA PERERA

Shane L Rogers, Edith Cowan University, School of Arts and Humanities, Perth, Western Australia, Australia

Stephen J. Edwards & Rebecca Perera, Western Australia Health Department, Perth, Western Australia, Australia

Correspondence: shane.rogers@ecu.edu.au

## Abstract

**Objective.** The primary objective was to investigate the impact of shared versus individual office space on therapist appraisal of the work physical and social environment, and overall appraisal of working conditions.

**Method.** Therapists ( $n = 59$ ) from Child and Adolescent Mental Health Services in Western Australia were surveyed about their appraisal of the social and physical work environment, in addition to their overall appraisal of working conditions.

**Results.** Compared to therapists with individual offices, therapists occupying shared office space reported lower appraisal of the work physical environment and lower overall appraisal of working conditions. No difference was found between groups for appraisal of the work social environment. Additionally, when statistically controlling for office space, both the appraisal of the social and physical environment made an independent contribution to the prediction of overall work satisfaction.

**Conclusion.** This research reveals that shared office space can negatively impact therapist appraisal of their work environment and reduce overall appraisal of working conditions. Additionally, results reveal the high

importance of the physical environment for staff satisfaction in a mental health service.

**Keywords:** mental health services, job satisfaction, shared office space, therapists, physical environment, social environment

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**Competing interests:** The authors declare no competing interests.

## INTRODUCTION

### *Office space in healthcare*

The physical environment can impact service experience and well-being of both consumers and staff in healthcare settings. [1-6] This knowledge has influenced the construction of new facilities, and the refurbishment of old facilities, to be a more thoughtful process. [1] Organisations might assume that aspects of office design, commonly used in the corporate sector, are appropriate within the healthcare context. [7] It has been suggested that shared office space is one such design aspect that might be pursued in healthcare. [8] With the current trend towards integrated health care services (e.g., Integrated GP and mental health service) [9-12], and flexible work schedules [13], shared office space in Australian healthcare may become more prevalent. We use the term 'shared office space' to refer to offices that contain the primary workstation for multiple employees. The present study investigates how shared office space impacts appraisal of the work environment and job satisfaction for therapists working at community mental health clinics.

### *Shared office space – Positives and negatives*

Research into shared office space has primarily been conducted in corporate contexts. Potential benefits of shared office space for administrators are reduced construction costs, and ease of accommodating new employees. [14, 15] The potential benefits for employees are increased communication, collaboration, and team solidarity from more frequent interaction among colleagues. [14, 15] However, there are also potential negative unintended consequences. Staff job satisfaction may decline due to a decreased sense of personal space, privacy, equity and increased distraction. [15-21]

### *Work environment – Physical and social aspects*

In the organisational psychology literature, a distinction is made between physical and social aspects of the work environment. [2, 5, 22, 23] The physical environment constitutes the physical layout of the workplace, ambient noise levels, ventilation, and furnishings. [4] More specifically, Rashid and Zimring [2] make a distinction between indoor environmental variables (such as noise, temperature and air quality) and interior design variables (such as spatial layout and furnishings).

The work social environment constitutes an individual's perception of their organisational role [23-25], client and co-worker relationships [23, 24, 26, 27], and organisation-wide underlying beliefs and values. [24, 28] A distinction in terminology is made between organisational climate and organisational culture. [29, 30] Researchers using the term climate focus upon perceptions at a local level (e.g., relationships among co-workers), while researchers using the term culture focus on perceptions at a global level (e.g., beliefs about organisational values and support). [29, 30]

### *The present study – Therapists occupying distinct types of office space*

The present study constitutes an exploratory investigation into perceptions of the physical and social work environment of therapists occupying either individual or shared office space. Throughout this article, the term *therapist* refers to staff employed to conduct therapy sessions at Child and Adolescent Mental Health Services (CAMHS) clinics. Considering prior literature [15-21], it was anticipated that therapists occupying shared office space would report lower appraisal of the physical work environment, and lower appraisal of their overall working conditions.

Regarding social appraisal, shared office space might foster positive appraisal of workplace communication, collaboration, and facilitate a supportive workplace culture. [14] There is however also a potential for individuals to withdraw from interaction to cope with diminished personal space and privacy. [18] Additionally, close proximity might at times exacerbate conflict. [31] Considering these opposing forces, in the present study it was uncertain how, and if, office space would be associated with appraisal of the social environment.

A final aim of the present study was to predict overall work satisfaction from appraisal of both the social and physical work environment. There is a great deal of research linking both the work physical environment [2, 6, 15, 19, 20, 22, 32-35] and social environment [20, 24, 36-42] to work outcomes such as employee satisfaction and stress. However studies that consider both aspects of the environment in tandem are rare [15, 20], particularly in the context of mental health organisations. [35] The present study therefore seeks to add to the research literature by exploring the relative influence the work physical and social environment has upon therapist appraisal of their overall working conditions.

## METHODS

### *The sample and organisational context*

The sample consisted of 59 therapists (69% female) employed by Child and Adolescent Mental Health Services (CAMHS) across eight government funded community clinics in the metropolitan area of Western Australia. Some further participant characteristics are provided in Table 1. Participants were all qualified and employed to work in the delivery of psychological therapy and counselling to children, adolescents, and their families. This research received ethics approval from the

West Australian Health Department, audit number – 588QP.

Thirty-two of the surveyed therapists stated they occupied individual office space. The remaining 27 therapists stated they occupied shared office space and were required to book therapy space to see clients. The organisational context present at the time of the investigation presented a naturalistic experiment to contrast the experiences of therapists occupying shared office space versus those in more traditional individual offices. Mann Whitney tests were conducted to check whether participant characteristics differed across the individual and shared office groups. No significant differences were found for age ( $z = .72, p = .47$ ), years working in the industry ( $z = .52, p = .61$ ), or years working at CAMHS ( $z = .49, p = .63$ ). The groups were also not statistically different regarding gender composition ( $\chi^2(1) = .59, p = .44$ ).

**Table 1. Participant characteristics split by office space.**

	Individual office (n = 32)	Shared office (n = 27)
Gender	20 (female), 6 (male), 1 (missing)	21 (female), 10 (male), 1 (missing)
Age (years)	2 (26-30), 6 (31-40), 10 (41-50), 9 (51-50), 5 (older than 61)	2 (26-30), 4 (31-40), 12 (41-50), 6 (51-60), 2 (older than 61), 1 (missing)
Working in the industry (years)	2 (2-5), 7 (6-10), 23 (more than 10)	6 (2-5), 2 (6-10), 19 (more than 10)
Working at CAMHS (years)	8 (A year or less), 8 (2-5), 8 (6-10), 8 (more than 10)	4 (a year or less), 9 (2-5), 5 (6-10), 8 (more than 10)

### *Survey instrument*

A brief survey was administered by the first author attending staff meetings at clinics. Survey measures for therapist appraisal of

work social environment, physical environment, and overall appraisal of working conditions were required for our study. A practical constraint we faced was that the present research constituted a sub-part of a broader study, and survey space for items was very limited<sup>1</sup>. When consulting the literature we had difficulty locating a sufficiently brief measure of the perceived work social environment that encompassed aspects of both work climate and culture that was suitable for our purposes. [28] Therefore, we compiled our own brief list of questions to assess therapist perceptions of their work social environment. We also included a brief measure of our own devising for appraisal of the physical environment that we have published previously. [5] Some additional questions were included about noise, distraction, and work satisfaction. A couple of final open-ended questions were also included to obtain some qualitative data.

*Appraisal of the social environment*

The brief survey used in the present study included seven questions that aimed to measure appraisal of the work social environment. A 5-point response scale for these survey items was – (1) Not at all, (2) Somewhat, (3) Moderately, (4) Very, (5) Extremely. The survey items are provided below.

*Working at CAMHS I feel:*

- A sense of belonging.
- Appreciated.
- The work culture at CAMHS motivates me to be more productive.
- The work culture at CAMHS is supportive.

- There is a high degree of communication among colleagues.
- There is a high degree of collaboration among colleagues.
- If I have a problem/issue I will be listened to and it will be resolved.

A principal component factor analysis was carried out to confirm that the social environment survey items assessed a single factor. [43] Analysis revealed a single-factor solution to be the best fit, with only one eigenvalue above the commonly used criterion of 1 (eigenvalue = 4.67). Inspection of the factor loadings shows the social environment items all loading on a single factor, see Table 2. The Cronbach’s alpha value of this scale is .91. A composite social environment appraisal score was subsequently created by averaging across all items

**Table 2. Factor loadings for the appraisal of social environment measure.**

<i>Question item</i>	<i>Factor 1: Social environment</i>	<i>Uniqueness</i>
Belong	0.65	0.57
Appreciated	0.78	0.39
Productive	0.83	0.31
Supportive	0.90	0.19
Communication	0.87	0.25
Collaboration	0.83	0.31
Resolution	0.82	0.32

*Work satisfaction*

A single survey item assessed appraisal of overall working conditions via the statement: ‘Working at CAMHS I feel satisfied with working conditions’. This statement was

<sup>1</sup> The full final report from the broader study can be accessed at: <https://www.researchgate.net/publication/26121394>

0\_Staff\_and\_consumer\_perceptions\_of\_the\_physical\_environment\_in\_Western\_Australian\_child\_and\_adolescent\_mental\_health\_services\_CAMHS\_2014

included along with the social environment questions and was rated on the same 5-point response scale as those items. We recognise that a single item for measuring overall work appraisal is not ideal. However prior research has used simple questions to gauge overall satisfaction with the work environment in an effective manner that made us feel more confident with our own approach. [44]

*Appraisal of the office physical environment*

A measure of appraisal of the office physical environment was obtained via participants rating their office space on ten adjectives: Comfort, Safety, Space, Privacy, Noise, Toys/Books, Plants, Artwork, Lighting. The adjectives were rated on a 5-point scale: (1) Very Bad, (2) Bad, (3) OK, (4) Good, (5) Very Good. Again, we conducted a factor analysis finding evidence for a single dominant factor (eigenvalue = 6.32). Factor loadings are presented in Table 3. The Cronbach’s alpha of this scale is .95. A composite appraisal of the office physical space score was obtained by averaging across all items.

**Table 3. Factor loadings for the appraisal of office physical environment measure.**

<i>Question item</i>	<i>Factor 1: Physical environment</i>	<i>Uniqueness</i>
Comfort	0.94	0.11
Safety	0.82	0.32
Space	0.91	0.17
Privacy	0.91	0.17
Noise	0.89	0.20
Toys/Books	0.88	0.22
Plants	0.62	0.61
Artwork	0.80	0.36
Lighting	0.70	0.52

*Noise and distraction*

To further explore if shared office space was associated with greater noise and distraction, a few additional questions were included in the survey. Therapists were asked how often (during a typical working week) they speak with clients in a therapy room: (1) Never, (2) 1-3 times, (3) 4-10 times, (4) 11-20 times, (5) 21-30 times, (6) more than 30 times. They were also asked ‘When speaking with a client in a therapy room I have heard other people talking in the background’: (1) Never, (2) Sometimes, (3) Often, (4) Always. A follow up question was ‘When in a therapy room with a client if I hear other people talking in the background it...’: (1) Doesn’t make me uncomfortable, (2) Sometimes makes me uncomfortable, (3) Often makes me uncomfortable, (4) Always makes me uncomfortable. A set of three more questions about speaking with clients on the phone were asked using the same response scales as the therapy questions:

- During a typical working week how many times do you speak with clients on the phone?
- When speaking with a client over the phone I have heard other people talking in the background.<sup>2</sup>
- When on the phone with a client if I hear other people talking in the background it...

A final few questions focused on distraction. Therapists were asked ‘Have you been distracted by background noise when...’ -> On the phone with a client, in therapy room with client, working in your office space. These three items were rated on a 4-point scale: (1) Never, (2) Sometimes, (3) Often, (4) Always.

<sup>2</sup> The researcher who was physically present when administering the surveys clarified that this question was specifically referring to hearing other people

talking within their office environment rather than people talking in the background from the client’s end.



### *Final open-ended questions*

To gather some qualitative data to complement our quantitative results at the end of the survey two final items (with accompanying text box) were 'Below please provide any comments you have about the therapy rooms:', and 'Below please provide any comments you have about the office space'.

## **RESULTS**

As described by Andy Field [45], throughout the results section we report  $r$  as a measure of effect size for comparisons made between the individual and shared office groups. We use the guidelines of interpretation provided by Field [45] to assess whether effects observed are small ( $r = .10$ ), medium ( $r = .30$ ), or large ( $r = .50$ ). Participant responses to the open-ended questions were coded and sorted by first using key words in context, and then through a process of constant comparison, as described by Strauss and Corbin. [46]

### *The impact of office space on therapist appraisal of the work environment, and work satisfaction*

On average the shared office therapists were found to have a substantially lower appraisal of office physical environment composite score ( $M = 1.92$ ,  $SD = 0.73$ ) compared to the individual office therapists ( $M = 3.36$ ,  $SD = 0.78$ ),  $t(57) = 7.29$ ,  $p < .001$ ,  $r = .69$ . There was no statistically significant difference on the appraisal of social environment measure between the shared office therapists ( $M = 2.66$ ,  $SD = 0.87$ ) and individual office therapists ( $M = 3.06$ ,  $SD = 0.86$ ),  $t(57) = 1.74$ ,  $p = .09$ ,  $r = .22$ . Results therefore suggest that shared office space has a negative impact upon therapist perception of the physical environment but does not necessarily impact their appraisal of the social environment. The mean response to the overall satisfaction with

working conditions item was substantially lower ( $M = 1.81$ ,  $SD = 0.83$ ) for therapists occupying shared office space compared to those with individual offices ( $M = 2.87$ ,  $SD = 0.83$ ),  $t(57) = 4.44$ ,  $p < .001$ ,  $r = .51$ ).

### *Predicting overall work satisfaction from appraisal of the social and physical work environment*

A secondary aim was to predict work satisfaction from the appraisal of both the social and physical environment, while controlling for office space, and any other relevant clinician characteristics. No participant characteristic (i.e., age, gender, length of time working in industry, and length of time working with CAMHS) was found to significantly associate with work satisfaction so were not included in the regression as predictors (all  $ps > .05$ ). The social (Pearson  $r = .58$ ,  $p < .001$ ) and physical (Pearson  $r = .56$ ,  $p < .001$ ) environment composite scores were both correlated with work satisfaction, but not with each other. A multiple regression analysis was conducted entering overall appraisal of working conditions as the outcome variable, with the composite social and physical environment appraisal scores entered as predictors. To control for office situation (shared versus individual) this variable was included as an additional binary predictor. Overall, the predictors significantly accounted for 54% (Adjusted R-Square = .54) of the variance in overall appraisal of working conditions ( $F(3, 55) = 24.03$ ,  $p < .001$ ). When controlling for office situation, appraisal of the work social environment (standardized beta = .49,  $p < .001$ ) and work physical environment (standardised beta = .38,  $p < .001$ ) both independently contributed to the prediction of overall appraisal of working conditions. Comparison of the standardised betas indicates that in the current study, when controlling for office space, appraisal of the

work social environment made a slightly stronger contribution to the prediction of overall appraisal of working conditions compared with appraisal of the office physical environment.

*Results from additional survey questions – Noise and distraction*

As part of our survey we further explored some other relevant issues that may be affected by shared office space in a mental health organisation. Mental health services by their very nature involve a lot of sensitive conversations. We asked clinicians in our study how often they spoke to clients in therapy rooms or on the phone, how often they heard background noise during conversations with their clients, and how uncomfortable this made them feel. We also asked how often they experienced distraction due to noise when in their office, in a therapy room, or on the phone. Responses to these items are presented below for therapists occupying individual offices (Table 4) and shared offices (Table 5).

**Table 4. Responses to noise questions by therapists occupying individual offices (n = 32). Percentage scores are calculated excluding missing values.**

Question	Responses
How often speak with clients in a <i>therapy room</i> each week?	1-3 times = 1 (3%), 4-10 times = 12 (38%), 11-20 times = 16 (50%), 21-30 times = 2 (6%), More than 30 times = 1 (3%)
How often hear others talking in the background when in <i>therapy room</i> with client?	Never = 9 (28%), Sometimes = 16 (50%), Often = 6 (19%), Always = 1 (3%)
How often hearing others talking in the background when in <i>therapy room</i> with client causes discomfort for clinician?	Doesn't = 3 (12%), Sometimes = 10 (40%), Often = 8 (32%), Always = 4 (16%), missing = 7
How often speak with clients on the <i>phone</i> each week?	1-3 times = 2 (6%), 4-10 times = 14 (44%), 11-20 times = 10 (31%), 21-30 times = 1 (3%), More than 30 times = 5 (16%)

How often hear others talking in the background when on the <i>phone</i> with client?	Never = 13 (41%), Sometimes = 16 (50%), Often = 2 (6%), Always = 1 (3%)
How often hearing others talking in the background when on the <i>phone</i> with client causes discomfort for clinician?	Doesn't = 6 (19%), Sometimes = 6 (19%), Often = 3 (9%), Always = 4 (13%)
How often distracted by background noise when in office?	Never = 11 (34%), Sometimes = 14 (44%), Often = 6 (19%), Always = 1 (3%)
How often distracted by background noise when in therapy room?	Never = 11 (34%), Sometimes = 15 (47%), Often = 5 (16%), Always = 1 (3%)
How often distracted by background noise when on phone?	Never = 10 (31%), Sometimes = 17 (53%), Often = 5 (16%)

**Table 5. Responses to noise questions by therapists occupying shared offices (n = 27). Percentage scores are calculated excluding missing values.**

Question	Responses
How often speak with clients in a <i>therapy room</i> each week?	1-3 times = 1 (4%), 4-10 times = 16 (62%), 11-20 times = 8 (31%), 21-30 times = 1 (4%), missing = 1
How often hear others talking in the background when in <i>therapy room</i> with client?	Sometimes = 10 (39%), Often = 10 (39%), Always = 6 (23%), missing = 1
How often hearing others talking in the background when in <i>therapy room</i> with client causes discomfort for clinician?	Doesn't = 1 (4%), Sometimes = 7 (27%), Often = 12 (46%), Always = 6 (23%), missing = 1
How often speak with clients on the <i>phone</i> each week?	1-3 times = 1 (3%), 4-10 times = 6 (22%), 11-20 times = 12 (44%), 21-30 times = 6 (22%), More than 30 times = 2 (7%)
How often hear others talking in the background when on the <i>phone</i> with client?	Sometimes = 7 (26%), Often = 12 (44%), Always = 8 (30%)
How often hearing others talking in the background when on the <i>phone</i> with client causes discomfort for clinician?	Doesn't = 3 (11%), Sometimes = 6 (22%), Often = 7 (26%), Always = 11 (41%)
How often distracted by background noise when in office?	Never = 1 (4%), Sometimes = 5 (19%),

	Often = 13 (48%), Always = 8 (30%)
How often distracted by background noise when in therapy room?	Never = 11 (34%), Sometimes = 15 (47%), Often = 5 (16%), Always = 1 (3%)
How often distracted by background noise when on phone?	Never = 1 (4%), Sometimes = 6 (22%), Often = 14 (52%), Always = 6 (22%)

The individual office group was compared with the shared office group on all variables using non-parametric Mann-Whitney tests. To minimise the chances of making a type 1 error (i.e., concluding there is an effect where there is none) we applied a Bonferroni correction to the p-value for determining statistical significance as described by Field. [45] We divided the number of comparisons (i.e., nine) by the standard .05 p value so that only a p value less than .006 would be deemed statistically significant. The individual office group did not statistically differ from the shared office group regarding the frequency of therapy sessions each week or frequency of phone conversations with clients each week ( $ps > .006$ ). Nor did the groups differ regarding how often individuals reported experiencing discomfort if they heard background noise during therapy or phone conversations ( $ps > .006$ ).

The shared office group were found to report hearing others talking in the background substantially more often when interacting with clients in therapy rooms ( $z = 3.71, p < .006, r = .48$ ), and when on the phone with clients ( $z = 5.21, p < .006, r = .68$ ). They also reported more frequent distraction when in the office ( $z = 4.43, p < .006, r = .58$ ), in therapy rooms ( $z = 3.00, p < .006, r = .39$ ), and on the phone ( $z = 4.64, p < .006, r = .60$ ).

#### Qualitative responses

Participants were given the opportunity to provide open-ended feedback regarding both the office and therapeutic space. The comments are provided as an appendix at the end of the article in tables 6 to 9. Overall, minor themes were reference to space issues (e.g., too few rooms), cleanliness issues, lacking resources, and air-conditioning issues. In Western Australia the summers tend to be very hot and air-conditioning problems can produce substantial discomfort. The main themes that emerged were about office space. Many therapists from the shared office group lamented the fact they had to share offices. While on the other hand there were multiple comments from the individual office group acknowledging they had an individual office and were appreciative of it. From both groups comments were made that provide further insight into why individual offices were preferable. Shared offices produce problems with noise/distraction, feeling ‘crowded’ and lacking personal space, with associated concerns about confidentiality. Some therapists reported experiencing tension/stress associated with having to book therapy rooms. In other comments concern was expressed about how the non-consistent environment for therapy sessions (i.e., changing rooms between sessions due to the booking system) might negatively impact the therapeutic process. Overall, the qualitative data was consistent with the quantitative findings, that clinicians much preferred having individual office/therapy space.

#### DISCUSSION

The main aim of the present study was to investigate the impact of working in shared office conditions on West Australian therapists working in community Child and Adolescent Mental Health Services (CAMHS). The therapists in shared office space reported lower appraisal of their physical work

environment, and lower overall appraisal of working conditions. No significant effect of office space was found for appraisal of the work social environment. Results are consistent with prior research in other professions finding that shared offices can have negative consequences upon staff appraisal of the work environment [15-19], and shared offices do not necessarily have any social benefits for employees. [17, 20] An additional finding of the present study was that when statistically controlling for type of office space, both appraisal of the work social and physical environment made an independent contribution to the prediction of overall work satisfaction.

The therapists occupying shared offices reported hearing more frequent background noise when on the phone and in therapy with clients. They also reported experiencing more frequent distraction on the phone, in the office, and in therapy space. Open-ended responses provided by the therapists were consistent with the quantitative findings. Therapists occupying shared offices generally wrote negative comments about their office situation, for example: *"The cramped, noisy work space makes it very difficult, if not impossible, to focus, to think clearly & hinders productivity & clear thinking & not great for clinicians!"*. While therapists occupying individual offices generally appeared to be mindful of their fortunate situation, for example: *"Have my own office very happy with this"*. Multiple therapists mentioned that shared office space has a negative impact by reducing privacy and is associated with distraction because of noise, for example: *"Cramped. No privacy. Constant noise in background from other staff talking on phone or with colleagues making it difficult for me to concentrate on triage calls"*. These findings are consistent with prior literature reporting that

noise/distraction issues and a diminished sense of privacy are commonly experienced in shared office contexts. [15-21] Research has suggested that these kind of issues are compounded in professions that require a high level of concentration. [47, 48] Working as a therapist involves a lot of report writing that benefits from an individual office as mentioned in a comment from a therapist with their own office: *"My office space is small but functional and provides a safe space for clients. It also allows me to close my door at times to focus on report writing and other computer based tasks to ensure I'm utilising my time effectively and not disturbed by colleagues"*.

Studies have found that a comfortable and welcoming physical environment can positively influence client's perceptions of therapists [49-51], and increase the amount of self-disclosure by clients. [52-54] In the present study, some therapists were concerned about the impact that shared offices with bookable therapy rooms was having on the therapeutic process with their clients. For example, *"No consistency across therapy rooms - which is definitely NOT ideal for children & young people. I am used to being able to provide consistency of environment, space & features/toys - which is important therapeutically. We cannot ensure the same room is available from session to session"* and *"It is essential that clients can develop a sense of security and safety by having the same therapy space every time and it is an environment that feels comfortable and welcoming, not sterile"*. Furthermore, one therapist described how a lack of control over the therapeutic space can limit the therapist's options when working with clients, for example: *"I would much prefer clinicians have their own offices and use this for therapy - we don't just do therapy - we do psycho-education, link people to resources & supports and we*

*need to be able to access a computer/printer in many sessions. When you have your own office, you can have informative handouts at the ready to give out when the need arises".* In the context of the present research, the negative impact of shared office space for therapists may therefore be compounded by a lack of control over the therapeutic space.

Therapist contact with clients occurs not just in the therapy rooms, but also via phone calls. Background noise with associated distraction during communication with clients is one issue. Another issue brought up by the therapists was concern about confidentiality when on the phone in shared office space, for example: *"Nowhere to have a private & confidential phone call with clients or other agencies regarding a client"*. It must also be noted there were also multiple comments provided that indicated confidentiality was an issue in some therapy rooms due to poor sound-proofing, for example: *"Two therapy rooms are not sound-proofed & they are very cramped. It is possible to actually hear the conversation in the other room"*. A final issue that was mentioned in some comments was how shared bookable therapy rooms could hinder productivity and had potential to cause tension among staff. The service experiences busy periods just before and after school hours, where therapists are forced to compete for time slots. For example: *"Competition for bookable therapy space causes frustration and impacts on team culture and results in less productivity due to limited opportunity to book consecutive clients"*, and *"It is disruptive needing to compete for therapy space with other clinicians"*.

#### *Limitations and avenues for future research*

One limitation of the present study is that the study design makes it difficult to ascertain if the negative impact of the shared office space

is primarily driven by a lack of personal space for conducting therapy, lack of personal space and privacy when working on case reports, logistical and social problems with the booking system, or a combination of these factors. Future research is needed to better understand and tease apart the extent that these factors can impact upon work appraisal of therapists (and for health practitioners in general). Furthermore, there are a multitude of other factors that might impact satisfaction with the work environment not encompassed by the present study. For example, the impact of different management practices [55, 56], and perceptions of the organisational ability to deliver quality care. [57] How these and other factors interact with the aspects identified in the present research are avenues for further inquiry.

Another limitation is that the measures used in the present study were newly created to meet a requirement to keep the survey as brief as possible. Future research with more established and comprehensive measures is required to better understand the relative importance of the work physical and social environment upon health practitioner satisfaction with their workplace. A final and important limitation is that we did not collect extensive information on therapist characteristics. Future research should collect more thorough background information on participants. For example, in the present study we did not collect information regarding therapist status as a full-time or part-time employee. Nor did we collect information to provide us with an idea regarding specifically where a therapist fit within the hierarchy of their clinic. Both factors could also influence perceptions of the environment and work satisfaction and should be controlled for in future research.

## CONCLUSION

An established literature exists on the demanding nature of mental health work and an increased prevalence of stress/burnout with increased staff turnover in mental health services compared with most other professions. [40, 58, 59] Findings of the present study suggest that shared office settings can diminish staff appraisal of their work environment, which might exacerbate the standard stressors associated with treating mentally unwell individuals, or act as a barrier for coping with stress. [2, 60] Therefore, short term money saved from utilising shared office space may cost more in the longer term due to staff dissatisfaction, turnover, and decreased

quality of service delivery. [8, 47, 48, 61-64] As summarized by one therapist in the present study: *"Shared office space has placed our therapeutic work into the category of desk office workers rather than understanding the fundamentals of therapy. It is all about saving dollars rather than the bigger picture of assisting clients to change their behaviour, emotions, etc"*. Finally, our study of *therapists* complements other recently published work that has provided evidence to suggest a relationship exists between *client* appraisal of the physical environment and their reported emotional experience in a mental health service environment. [5]

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**Table 6. Comments provided by therapists occupying individual offices, about office space.**

OSH Field day - Bad chairs. Bad lighting. Desks too low. PC screen too low. Carpets dirty. Air con dirty. Air ducts dirty.
Office space limited, need to review use of rooms. Limited funding to support this change. 14 staff - only two shared rooms. Need additional computer terminals & desks for when we have additional staff (e.g., registrars & students & increased, PTE). Also only 3 x therapy space, which 5 clinicians use regularly, so on occasion no space to see clients. Only females share office rooms, all male have individual space/office - inequitable gender balance: challenging issue to implement change.
Office space - dark hallways - big heavy doors that don't have windows in them - possibly be safety issues.
We could do with a makeover of our 1960s building. Paint peeling - external walls makes this an uninviting building to our clients
Need more space & resources



## The impact of shared versus individual office space on therapist appraisal of their work environment

Have my own office very happy with this
Individual & staff V. satisfied with this
Adequate space and comfort
Would like better chair, and ergometric set up
Equipment needs to be upgraded urgently
My office space is small but functional and provides a safe space for clients. It also allows me to close my door at times to focus on report writing and other computer based tasks to ensure I'm utilising my time effectively and not disturbed by colleagues
The air conditioning is very bad
Important to have a dedicated office space for each clinician. The client/family have to be seen in a safe/secure, predictable environment - best if in the same space each time.
Appears to be a lack of office/therapy space - have had to use a small room next to waiting room and conference room - very difficult for both admin and therapy (i.e., noise level and confidentiality)
For me MUCH better office space than previous clinic
My office space is suitable for the work I do with individuals and their families as well as all the admin work that I am expected to do
More up-to-date computers would be useful.

**Table 7. Comments provided by therapists occupying individual offices, about therapy space.**

Too few for size of team and not sound proof
Therapy rooms don't have windows and one room has no observation window in door. Would like a room to enable CAMHS to run regular groups and undertake art with young people. Room would have a sink.
Therapy rooms are comfortable and provided with toys - some better than others. Chairs are very heavy and can be difficult to move.
It is VERY important for therapy rooms to have a window - I have worked in a windowless, interior room, where clients often became claustrophobic and agitated.
Therapy room with own a/c is good! Sound proofing and window. Not happy with size: Not conducive to seeing young children or more than 3 ppl at a time. Therapy rooms are either box room size or double sized. Box room sized is not suitable for play therapy. Boxed room size therapy rooms not suitable for sharing b/w clinicians, which has happened due to space shortages. We do have sound proof rooms which is fabulous!
Poor decor. Small.
There always seems to be a shortage of therapy rooms in CAMHS, which can cause tension within a team... impact clinician productivity and quality of work. Impact client experience and also restrict our opportunities to take on students for 'placement'.
Adequate
Individual & spacious encouraging a relaxing approach
Adequate space & comfort, selection of therapeutic toys/games
Would like some more/new toys and equipment. Would also like to get rid of fluorescent lighting
Need 1-2 bookable rooms with appropriate facilities (e.g., mirrors for family therapy, etc)
Competition for bookable therapy space causes frustration and impacts on team culture and results in less productivity due to limited opportunity to book consecutive clients.
Need to be bigger. Need better air conditioning.
In comparison to other services the ability to have my own therapy room which is very well equipped is better than other services I have worked in
Therapy rooms are also office. Importance for clients to return to same room. Room set up for purpose of therapy. Allows for all clinicians to have clients at same time.
The air conditioning is very bad
I am fortunate to have a dedicated office in which I can do therapy. It is suitable, sometimes a bit noisy - but generally there are no problems
Therapy rooms are much better than the previous clinic I worked in. In my previous clinic I shared an office with 5 staff, very noisy, awful working conditions, unable to concentrate or make phone calls. Had to book rooms to see clients, most rooms booked so this was very difficult.
Essential clients can develop a sense of security and safety (containment) by having the same therapy space every time and it is an environment that feels comfortable and welcoming, not sterile.
Too busy

## The impact of shared versus individual office space on therapist appraisal of their work environment

Important to utilise same therapeutic space with clients. At another clinic I didn't have my own room - bookable... and this detracted from therapy not having the consistency & same room space & toys. There were difficulties booking clients for urgent appointments.

**Table 8. Comments provided by therapists occupying shared offices, about office space.**

Office space - we have had lots of changes. My resources and materials are in dis-array due to several room changes & no time to sort out. I would much much prefer clinicians have their own offices and use this for therapy - we don't just do therapy - we do psycho-education, link people to resources & supports and we need to be able to access a computer/printer in many sessions. When you have your own office you can have informative handouts at the ready to give out when the need arises. We have less time to make do with worse facilities which takes more time.
I am happy with my workplace, however share the room with 3 other people. We have had ongoing problems with air-conditioning resulting in the use of heating in winter and hot in summer resulting in sleepiness. I have a work colleague who doesn't understand personal space and shares her cares with anyone in the room regardless of cues given to her. We are privy to all telephone calls made by triage officer and we have resorted to ear plugs to complete reports and formulations and check file information.
Nowhere to have a private & confidential phone call with clients or other agencies regarding a client. No where one can go in office to have personal space, do a task without distraction or being uninterrupted, reflect on clinical work or debrief. Facilities are dirty, unkempt. Infestations of insects and vermin. Air con frequently inadequate.
Having predominately had individual rooms (therapy use & office space) now having 2 other people makes it confined, noisy, no privacy, no silence to think!
The cramped, noisy work space makes it very difficult, if not impossible, to focus, to think clearly & hinders productivity & clear thinking & not great for clinicians! Stress levels increase when people are in too close proximity - this is definitely the case for staff at my workplace. We need sound dividers at the very least! Aircon NEVER works consistently & causes discomfort... some spaces are like saunas while others are icy!
It is cramped. There is no privacy at all. There is no storage for items we need such as group materials. Carpets and walls are dirty. Ceilings leak... whiteboards in all therapy rooms & offices need to be replaced. Computers are slow & outdated. Noise, when on the phone confidentiality to clients as there are 3-5 ppl in a room all conversations are heard by a room full of people. It is difficult to hear when there are 2-3 people in an office meant for one person. TOILETS - this as a MAJOR problem - they are dirty... we have 2 toilets for 46+ staff often there is not one available. This is a problem for female staff. One toilet has no ventilation. Water floods through skylights when it rains.
Dirty. Cleaning not done properly. Carpets stained. Gets infested (i.e., ants, millipedes). Dark. Aircon never work properly. Noisy. Overcrowded. Unpleasant to work in. Generally atrocious.
Shared office space. Clear division in staff - some ppl work very hard (all female). ALL males don't appear to work very hard including psychotherapist - this causes lots of work stress.
Office space is allocated with no equity. Almost all women are sharing offices and all men have their own office. Also, the people who are seeing the most clients do not have their own room whereas people with smaller client loads have their own room.
Shared office - sometimes lack of privacy, etc
Shared office space has placed our therapeutic work into the category of desk office workers rather than understanding the fundamentals of therapy. It is all about saving dollars rather than the bigger picture of assisting clients to change their behaviour, emotions, etc.
Too small, confidentiality breaches, plus becomes very hot in summer, and very cold in winter, air con regularly breaks. Oven past 10 years.
While there are issues of noise and privacy... clinicians generally are respectful of other's work space
Some benefits of increased communication amongst staff, opportunity to discuss work (i.e. informal peer supervision) and at times commraderie between staff. However, shared office space is largely extremely disruptive and distracting especially when a high amount of work requires a degree of confidentiality.
Overcrowded. noisy. no power points at desk level. cluttered. inconsistent temperature management. toilet facilities needing updating.
More toilets - There is one toilet!
Cramped. No privacy. Constant noise in background from other staff talking on phone or with colleagues making it difficult for me to concentrate on triage calls.
Woefully inadequate. Interfere to a large degree to the performance of peoples' jobs
Shared space, sometimes difficult to have phone conversations. 2 locked doors to access printers.

**Table 9. Comments provided by therapists occupying shared offices, about therapy space.**

## The impact of shared versus individual office space on therapist appraisal of their work environment

<p>It would be good to have therapy rooms that are "adolescent friendly" and 2 dedicated play therapy rooms. It is less than desirable to try to combine these age groups in the same facilities. Play therapy rooms need to have sand trays and well stored array of play therapy materials. We have an office to a window and formerly had microphone/recording equipment to use for family therapy/reflective team work due to pressure on therapy space we are no longer to book this for this purpose, although the team has identified the need for a family therapy team.</p>
<p>They are too small for families and resources are geared at young children and most of our clients are teenagers. In the past when working with people with mental health issues I have had my own room and much prefer this however have worked in other environments sharing interview rooms and it has been an easier process.</p>
<p>Not enough therapy rooms for the volume of clients &amp; number of staff. Most therapy rooms insects often invade the walls. Dirty - i.e., carpets dirty, walls are dirty - the cleaner rarely vacuums the floors (including the toilets) unless asked. Air con frequently inadequate thus making it uncomfortable.</p>
<p>Therapy rooms are untidy - Toys are meant for younger patients - not adolescents. Carpets stained. Not the same room each time - walls need painting and pictures. Just old and tired rooms.</p>
<p>No consistency across therapy rooms - which is definitely NOT ideal for children &amp; young people. I am used to being able to provide consistency of environment, space &amp; features/toys - which is important therapeutically. We can not ensure the same room is available from session to session. Noise &amp; poor soundproofing is a problem. Dirty carpets, scuffed, marked walls &amp; paintwork - so disrespectful to clients! Cluttered, too many toys with lack of storage space.</p>
<p>Two therapy rooms are not sound-proofed &amp; they are very cramped. It is possible to actually hear the conversation in the other room. There is no storage for toys in the building or rooms and consequently the rooms look like toy shops! The carpets are dirty. We have a rodent problem, an ant infestation and now a centipede invasion as well. Therapy room walls are dirty. There are no phones, no clocks. Windows are actually barred, often graffiti is on these at the back of the building. The toilet in the corridor by the therapy room smells &amp; this wafts into one of the therapy rooms. One room has a permanent leak when it rains.</p>
<p>Not cleaned properly, carpets stained. Not appropriately resourced for teenagers... can hear conversations in corridor.</p>
<p>Too many clinicians sharing limited space.</p>
<p>It is disruptive needing to compete for therapy space with other clinicians. The rooms are not at all soundproof and this is not appropriate.</p>
<p>I don't have one... I have to use different rooms... sometimes hard to find a room.</p>
<p>Not enough therapy rooms (4 currently). Psychiatrists should only have a designated office not therapy room/office facility! Sound proofing, appropriate toys and chairs etc required. Clients frequently say to me as we walk to a therapy rooms "Oh! What room are we in today!"</p>
<p>Far too small. Not client (adolescent) focused. Confidentiality breaches.</p>
<p>Therapy rooms are well set-up &amp; was done with a lot of forward planning &amp; dedication from the clinicians themselves.</p>
<p>Comfort can be increased with appropriate furniture which is more child or adolescent friendly e.g. couches, fresh decor and other furnishings. Privacy can be increased by use of sound proof walls.</p>
<p>Not enough therapy rooms. Unable to see clients when not enough room.</p>
<p>It is difficult to share therapy rooms... It means you have to work certain days (if part-time) which is tricky with childcare in order to have a room available.</p>
<p>Completely inadequate. No privacy. No soundproofing. Constant noise and distraction outside. Chairs/furniture old. Paint horrible.</p>
<p>Poor soundproofing.</p>

# A Comparison of Three Payment Systems For Public Paediatric Dental Services

JENNIFER HANTHORN CONQUEST, JOHN SKINNER, ESTIE KRUGER, MARC TENNANT

*Jennifer Hanthorn Conquest - University of Western Australia School of Anatomy Physiology and Human Biology, School of Human Sciences, 35 Stirling Highway, Crawley, Western Australia 6009, Australia*

*John Skinner - Centre for Oral Health Strategy New South Wales, Wentworthville, New South Wales 2145, Australia*

*Estie Kruger, Marc Tennant - University of Western Australia, International Research Collaborative, Oral Health and Equity, School of Anatomy, Physiology and Human Biology, Perth 6009, Western Australia, Australia*

Correspondence: h.black@westernsydney.edu.au

## Abstract

**Objective** This study investigated the delivery of paediatric (0-17 years) government dental services in New South Wales (NSW), Australia through public dental clinics and the commissioned payments models of Fee-for-Service and Capped-Fee.

**Method** De-identified patient data from government provided dental care and the commissioned services was sourced from NSW Oral Health Data Warehouse for evaluation and interpretation using descriptive analysis during the period 1 January 2012 to 31 December 2013.

**Result** The breakdown of dental care provided the associated cost analysis for the study's cohort that resulted in both years, more than 50 percent dental services offered to paediatric patients were

preventive care in all payment systems. The most common preventive items offered were fluoride treatment, dietary advice, oral health education and fissure sealants.

**Conclusion** There was little difference in the mix of dental care provided between study years and age groups through the three payment systems in NSW. The difference between the government services and those provided via the Fee-for-Service and Capitation payment systems was negligible.

This has important implications for the delivery of dental care to public dental care, particularly when patients may not live close to a public dental clinic and also with the interest nationally in giving patients greater choice.

**Keywords** Paediatric, Payment models, Oral health

### INTRODUCTION

Australia has always relied on a mix of State Government, Commonwealth Government, and private funding to finance the delivery of healthcare services. Medicare, a Commonwealth funded system, provides free or subsidised treatment by doctors, specialists, optometrists, and in a very narrow range of specific circumstances, dentists and other allied health practitioners. In many cases, individuals are expected to contribute via a co-payment where bulk-billing is not offered. Bulk-billing is the practice among health professionals of choosing to be paid reduced fees directly by the government, rather than bill patients fully and bear the cost of billing.

Dentistry operates through quite a different model. The majority of dental care is funded by the individual in a user pay, free-market system, with costs often off-set via private health insurance. For those without the means to access private dental services, a safety-net public dental service is provided by State and Territory (State) Governments.

In New South Wales (NSW), the State with the largest population in Australia, the NSW Government provides free dental care to all children and adolescents (32% of total population). [1]

To address the dental needs of these children and adolescents, the public dental services are provided by fifteen Local Health Districts, through a mix of clinicians, including dentists, oral health therapists, dental hygienists and dental prosthetists. [1,2] The Government service is provided, in part, by Government clinics located in hospitals, schools, community health facilities, or mobile dental clinics. In addition, services are also provided to public dental patients via a voucher (Fee-for-Service) system using private dentists. Similar vouchers systems are used for public dental patients in

other countries. [1] There are several payment systems used by the NSW Government, through which eligible patients, including the young and the disadvantaged, can receive free public dental care. [1,2]

The initial access point for a child and adolescent to receive free dental care during this study, and currently across NSW, is through the Government service telephone triage process that prioritises those most in need based on self-reported symptoms and socio-demographic risk factors. Thus, all public dental services in NSW are funded under one of three payment systems: A fee-for-service-scheme (FFSS) provided by private practitioners (dentists); a Capped-Fee capitation payment scheme (CPS) provided by final year oral health therapy students; and a free Public Dental Service (PDS) provided by Government oral health therapists in government clinics.

### The Three Payment Systems

Three payment systems for public dental services were compared.

The first payment system is the public dental service (PDS) In-house provision of care within public dental clinics. It offers paediatric general dental services, such as examinations, restorations, and dentures, with restricted specialist services and outreach specialist services to rural and remote areas. [1] The paediatric general in-house services under the PDS were mainly provided by oral health therapists.

Local Health Districts in NSW also procure private practice services from dentists through a contracted Fee-for-Service model, particularly when demand is high or additional Commonwealth funding is available. This Fee-For-Service-Scheme (FFSS) payment system offers emergency, general, and denture vouchers that can be used with private dental

practitioners registered under the NSW Oral Health Fee for Service Scheme. [1] This is an alternative service delivery model for all NSW Local Health Districts. Under the FFSS a limit is set based on the Department of Veterans Affairs Schedule of fees. [1] The FFSS payment system is funded by the Government to external private practices based on set fees for each the item of care provided. [4]

A Capped-Fee capital payment system (CPS) was introduced in 2011, in the former Greater Southern Area Health Service in NSW. This payment system subsidised an educational institution to use Bachelor of Oral Health students (BOH) to deliver dental care to child Government service patients. [1] The CPS offers diagnostic courses of care for: (i) active caries and pain; (ii) active caries and no pain; and (iii) no active caries and no pain. These services are provided to children under 18 years, in the following age bands: aged 0-5 years, 6-11 years and 12-17 years. The CPS payment limits for these diagnostic courses of care and age bands were based upon the underlying caries status of the NSW child population presented in the 2007 Child Dental Survey. [1] The CPS payment system offered one annual, full course of care for child patients, treated by BOH students under direct supervision.

Therefore, the study was conducted to determine if the mix of dental treatment items of care, provided through the three payment systems, by the different practitioner types, were influenced by the payment system used to treat patients.

The study was completed under ethics approval from The University of Western Australia (RA/4/1/5606) and the Greater Western Area Health Service Human Research

Ethics Committee (HREC/13/GWAHS/25). These organisations comply with the Declaration of Helsinki. Both organisations granted a 'waiver' to the requirement for verbal or written consent for the analyses in this study.

### **METHODS**

The study included the analyses of 0 to 17-year-old de-identified patient record data obtained from NSW Health Oral Health data warehouse a two-year period (1 January 2012 to 31 December 2013).

This study is largely descriptive and the use of non-parametric tests to determine significant differences between the three payment systems would not add value to the findings.

The children and adolescents treated through both the PDS and FFSS payment systems were distributed across NSW, whilst the children who received care through the CPS payment system, were located in the former Greater Southern Area Health Service.

### **Databases**

NSW has eight individual oral health databases that record patient demographics, dental treatment provided, type of course of care, and the practitioners details for services provided to public dental patients. The databases include all three funding models; PDS, FFSS, and CPS. Patient data for the PDS are recorded by the treating practitioner. The patient data for FFSS and CPS payment systems are captured through the paper-based voucher process. The voucher is completed by the treating practitioner/student and signed by the child's parent or carer, confirming the treatment provided. The patient's treatment, identified on the voucher, is entered into the appropriate database by an authorised public servant.

**Service Item Data**

All item of care numbers and definitions in this study are derived from the Australian Schedule of Dental Services Glossary 9th edition. [1]

All analysis was completed using Version 13 Microsoft Excel.

**RESULTS**

The treatment item numbers used in the analysis were categorised into dental service groupings, consistent with previous studies, using the definitions identified in the Schedule (Table 1). All items provided in the calendar years 2012 and 2013, under the three funding

models for the entire State of NSW, were included in the study.

A total of 600,395 (2012) and 665,707 (2013) items of treatment were delivered during the study period. Of these, the combined total for 2012 – 2013 was: (i) 1,409 for the CPS, (ii) FFSS 5,870, and (iii) PDS 1,257,387 (Table 2). Approximately half of the children in each year were aged 6 - 11 years of age (Table 2). In 2012, it was noted that the proportion of 6 - 11 years of age accessing the FFSS and the CPS was higher than in the PDS, and was also higher than in 2013, although the total number of cases were relatively small.

Category	Description of Items	2012			2013				
		GOVT Item Number	Rank	CAP Rank	FFS Rank	GOVT Item Number	Rank	CAP Rank	FFS Rank
Preventive	Oral hygiene education	141	1	3	3	141	1	3	3
Diagnostic	Comprehensive oral examination	11	2	2	2	123	3	2	2
Preventive	Concentrated remineralisation – 1 tooth	123	3			11	2	7	7
Preventive	Fissure and/or tooth surface sealing	161	4	1	1	161	4	1	1
Preventive	Dietary advice	131	5	4	5	131	5	4	5
Restorative	Adhesive posterior restoration – 1 surface	531	6	5	6	22	7	6	6
Diagnostic	Intraoral periapical or bitewing radiograph	22	7	6	7	531	6	5	4
Diagnostic	Photographic records – intraoral	72	8			72	8		
Oral Surgery	Removal of a tooth or part(s) thereof	311	9		9	311	9		
Restorative	Adhesive posterior restoration – 2 surfaces	532	10			532	10		9
Preventive	Removal of plaque and/or stain	111	11			111	11		
Diagnostic	Periodic oral examination	12	12			12	12		
Preventive	Removal of calculus – first visit	114	13		8	14	14		8
Diagnostic	Consultation	14	14			114	13		
Preventive	Topical application of remineralisation – 1 treatment	121	15			121	15		
Diagnostic	Oral examination – limited	13	16			13	16		

Table 1

Age Group	2012			2013		
	GOVT	CAP	FFS	GOVT	CAP	FFS
0-5 years	113,696	85	0	120,972	105	487
6-11 years	269,003	579	1,704	306,025	443	2,296
12-17 years	213,352	72	468	234,339	125	915
<b>Total</b>	<b>596,051</b>	<b>736</b>	<b>2,172</b>	<b>661,336</b>	<b>673</b>	<b>3,698</b>

Table 2

**Overall Mix of Items**

There was little difference in the mix of items provided between study years and age groups (Figure 1). The difference between the PDS provided care and those of the FFSS and CPS was minor. In both study years, preventive services were the highest (over 50% of all groups of care provided) in all three funding models. The most common preventive items, in the three practitioner types and their associated funded models, were fluoride treatment (123), dietary advice (131), oral health education (141), and fissure sealants (161). In 2012, preventive items provided under the CPS and the FFSS were 15% and 10% higher respectively, than that provided under the PDS. The preventive items provided in 2013 through the CPS and the FFSS funded models were both 7% higher than the PDS. This may have been due to the smaller numbers in the procured models of care in 2012.

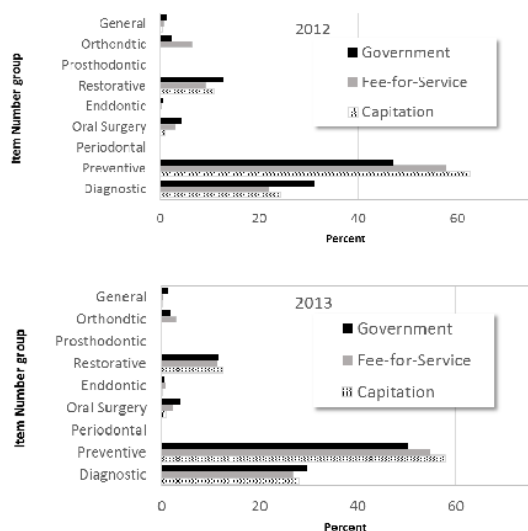


Figure 1

**Priority items**

There are in excess of 350 items that could be provided in the full Schedule, although only the most frequently used items of care were

included for analysis in this study. The PDS care in 2012 was used as the comparison. The PDS for 2013 did not differ significantly in the cluster of items provided: a total of 16 items made-up the 85% of the total care (Table 1). One variation was observed with the second ranked item, comprehensive examination (011) and third ranked item, concentrated fluoride application for a single tooth (123), being transposed in 2013. The CPS funded model include 6 items making up the treatment in 2012, which expands to 7 items in 2013, and is consistent with the top 7 items in the baseline 2012 Government service. The items included one surface posterior

restoration (531), radiograph (022) and removal of calculus – first visit (114). Similarly, the FFSS in terms of the mix of items was very close to the baseline. In 2012 there were 8 items, and in 2013 there were 9 items, most being consistent with the top volume items in the baseline PDS provided mix (2012). The difference was the movement of item removal of calculus – first visit (114) from 13<sup>th</sup> position in the baseline to 7<sup>th</sup> position in the FFSS funded model (Table 1).

**DISCUSSION**

Previous studies compare the types of medical and dental care provided through FFSS and CPS, and salaried government practitioners. [1,2,3] The studies evaluated the impact of funded service models on patient care and professional behaviour. Bradson *et al* (1998), Lo *et al* (2002) and others identified that the top two dental service deliveries provided under FFSS and CPS, were diagnostic and preventive services. [1,2,3] Other research has found that there was an increase in the use of fissure and/or tooth surface sealants and a reduction of restorations through CPS). [1] However, in this study, restorations ranked 5<sup>th</sup>



in 2012 and 6<sup>th</sup> in 2013 for both FFSS and CPS funded models, resulting in minimal reduction (Table 1).

This study supports the findings of Holloway *et al* (1990) and has shown that there is no evidence of major variations of the dental item mix provided through each of the funded models. [16] The study's results clearly show that preventive treatment remains the predominant care provided (over 50% of all care), irrespective of the payment system, for both 2012 and 2013.

The results of this study indicated that the mix of items of care provided did not differ in either of the two externally procured payment systems (CPS and FFSS) when compared to the baseline PDS. Eighty-five per cent of care was provided through approximately 10 items in the outsourcing funded models, compared to approximately 15 items in the PDS. The similarity of the overall items of care and the ranking (by volume) of items of care was similar among the three payment systems. Slight variations in ranks occurred between the three payment systems, as well as between respective practitioner types (Tables 1).

The major weakness of this study is the small number of children and adolescents who received dental care through the FFSS and CPS payment systems.

Nevertheless, this study has important implications for public dental services as it outlines alternative payment systems for the delivery of public dental care at a times when Commonwealth funding is available and the PDS alone cannot meet the demand for public dental services. In addition, the recent interest by the Australian Government's Productivity Commission in giving patients greater choice and greater use of the private sector also supports the further refinement of alternative payment systems for public dental services.

### CONCLUSION

There was little difference in the mix of items of care provided between study years and age groups of the three payment systems (Figure 1). The differences between the PDS and those of the FFSS and CPS were minor. In both years, preventive dental care was the highest, providing over 50% of all groups of items of care in all payment systems. The most common preventive care between the three practitioner types (dentist, oral health therapist and 3<sup>rd</sup> year oral health therapist student) and their associated payment systems were the fluoride treatment, dietary advice, oral health education and fissure sealant items of care.

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