

“Always antibiotics”: Journeys of parental treatment-seeking in Segamat, Malaysia

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1 Introduction

Over the nine decades since penicillin was first discovered in 1928, antibiotics have been widely used in various fields such as human and veterinary medicine, farming, and aquaculture as a means to treat infections (Fox-Lewis et al., 2018; Hart, 1998). However, their misuse and overuse has led microorganisms that potentially cause infections to become more resilient against antimicrobial drugs. Consequently, this has compromised the effectiveness of infection treatments (WHO, 2018). This phenomenon is known as antimicrobial resistance (AMR).

Antimicrobial resistance today is perceived as a severe global public health issue as it once again exposes humanity to the risks of life-threatening infections that are more challenging to treat. AMR has already increased mortality and morbidity worldwide, among which many casualties are children (Fox-Lewis et al., 2018; Khan et al., 2016). Previous studies have found that the preconditions of AMR vary in association with age, where children under the age of five are reportedly exposed to more antimicrobial medicines than patients of other age groups (Fox-Lewis et al., 2018).

This report is centrally concerned with the relationship between parental treatment-seeking and children's exposure to misuse and overuse of antibiotics in Segamat, Malaysia. We take a grounded approach to analysing data collected in July of 2018. Specifically, we examine how medications and treatments are perceived by parents, what pathways they follow when seeking treatments for their children, and how these are shaped by the social dimensions of access to medical treatment.

1.1 Aim

To study the relationship between parental treatment-seeking and the preconditions of AMR.

1.2 Objectives

- To document parents' pathways in seeking care for their children and how they are shaped by issues of accessibility and availability.
- To understand parents' perceptions of medications (especially antibiotics) administered to their children and how these may contribute to the preconditions impacting AMR.
- To determine how demographic factors (socioeconomic, ethnicity, rural/urban location), influence treatment-seeking practices.

Treatment-seeking is defined as a journey shaped by the knowledges and actions of parents, healthcare providers, and institutions (including pharmacists, traditional practices, doctors, government programs, and other health practitioners). Children are typically defined as under the age of 18, however most participants in our study had at least one child under the age of 7.

2 Context & Background

2.1 Medicine and remedy

When conducting research into the mundane and at-home aspects of healthcare, the polysemous ideas of medicine and remedy must be clearly defined. Here we refer to *biomedicine* as the institutionalised form of medicine - often referred to as 'Western' or 'modern' - practised throughout public and private hospitals and clinics in Malaysia. In contrast, we define *home remedies* as treatments practised in the home sphere, often without consultation from biomedical professionals. This includes Chinese, traditional, herbal, and self-administered pharmaceuticals. We identified this broad category of

remedies following conversations with parents who often simultaneously utilise traditional remedies and (self-described) “Western” medicines such as Vicks VapoRub and KoolFever and who, importantly, consider these practices to be distinct from ‘professional’ treatments performed in clinics and hospitals.¹ These two categories of medicine somewhat reflect the degree of agency parents have over treatment, as well as the forms of knowledge that might inform practices.

2.2 An introduction to Segamat, Johor

Our research was conducted in Segamat District, Johor, Malaysia, in collaboration with the South-East Asia Community Observatory (SEACO). Three of Segamat’s sub-districts, or *mukim*, were chosen for our research, due to the variation between ethnic groups, geography, and rurality (Allotey et. al., 2014). We conducted research in: Sungai Segamat, the district capital and the most urban *mukim*; Chaah, a rural *mukim* that is predominantly comprised of plantations; and Jabi, a *mukim* that is the location of two Felda villages, Pemanis 1 and 2 (ibid.). Within each *mukim*, we met with various communities of different ethnicities: a Chinese community in Sungai Segamat, an Indian community in Chaah, and two Malay communities living in Felda Pemanis 1 and 2 in Jabi. The diversity of the *mukim*, and the representation of the Malay, Chinese and Indian communities allows for our research to reflect to some degree the nation as a whole. Due to the proximity and contextual similarities of Felda Pemanis 1 & 2 below we may refer to them as Felda Pemanis, without specifying the village or the *mukim* of Jabi.

2.3 Antimicrobial resistance

Antimicrobial resistance evolves in strains of bacteria due to the overuse and improper use of antibiotics (Lodise et al., 2007). Therefore, a common precondition of AMR is the improper prescription or consumption of antibiotics used to treat illnesses with an unclear cause (Peters et al., 2011). This is common in viral or self-limiting infections – such as upper

¹ Described by three participants in Felda Pemanis 2

respiratory tract infections (URTIs) which might not be treatable with antibiotics – where a clinical diagnosis might incur costs or take longer than is suitable, and so precautionary treatment is prescribed. Additionally, lengthy courses of appropriate treatments can drive AMR as they pressure microbes to evolve resistance. The dogma of ‘completing the course’ has been one of the major drivers of prolonged antibiotic use, however this approach has been challenged by recent research (Crémieux et al., 2003; Llewelyn et al., 2017).

Typically AMR is discussed in terms of behaviours carried out across three domains: practice, policy, and science. Chandler and colleagues (2016) argue that the focus on individual behaviour limits the kinds of analysis which can be aimed at these three fields. In this report, we hope to look into the broader processes and structures of treatment-seeking (created and navigated by parents). However, the grounded and short time period of our research means we focus primarily on the individual behaviours of parents with ill children. The emerging health issue that is AMR demands wider social research to explore the community-level factors that drive resistance.

2.4 The Malaysian healthcare system

Malaysia’s healthcare system has both public and private sectors (Mohd-Tahir, Paraidathathu & Li, 2015). The previous government sought to improve accessibility to the private sector and reduce strain on the public sector through the restructuring program called ‘1Care for Malaysia’. The program also tried to increase public support and trust in the health care system while retrenching the welfare role of the state (Leng & Hong, 2014, pp.314). At the time of writing, the new government’s approach to the structure of healthcare is still unclear. Although public and private systems are relatively strong today, Western medicine has had to find its place in a pre-existing system that held traditional medicine as the norm for many communities (Heggenhougen, 1980). Now, the division of public and private practitioners, and the rigidity of these institutions, shapes the types of healthcare with which Malaysian families engage (Yu et al., 2008).

Previously, the Malaysian government acknowledged the rise of AMR and the Ministry of Health promoted the implementation of an antimicrobial stewardship program (ASP), including guidelines for antimicrobial prescriptions (Sing et al., 2016). The stewardship program mainly focuses on hospitals and primary public healthcare; however, independent studies have highlighted a lack of control measures at the over-the-counter pharmacy level and by private health care professionals (Pate et al., 2012; Sing et al., 2016). The promotion of AMR awareness is an important initiative that should be increased across the whole healthcare system.

Malaysia's public primary care system is composed of community nurse clinics (Klinik Desa, KD) and health clinics (Klinik Kesihatan, KK) (Partap et al., 2017). Kks are a major source of subsidised medical and dental services for many in the community, with visits incurring a nominal cost of RM 1 (Yu et al., 2008). Segamat District meets the national standard of four KDs and one KK per 20,000 individuals (Partap et al., 2017). However, roughly 180,000 people in the district are serviced by Hospital Segamat, a public hospital with only 310 beds (Allotey et al., 2014). Many people utilise private General Practitioners (GP, or Klinik Swastas) for primary care, instead of, or in combination with public facilities. Private hospitals, often more specialised, are located outside Segamat District, the closest being in Muar, roughly an hour away (Dr Naga, pers. comm., 2018). Private hospitals were rarely used for primary care services so are not discussed in the findings of this report.

2.5 The theory of access

The ability to seek and access healthcare is affected by different levels of fit between the patient and healthcare provider, termed "access" by Penchansky and Thomas (1981).

The five dimensions of access described are: availability, accessibility, accommodation, affordability, and acceptability (Table 1).

Table 1: Dimensions of access (adapted from Penchansky & Thomas, 1981)

Dimension of access	Definition and description
Availability	The levels of supply of healthcare services relative to the demand of clients. This includes the supply of providers, facilities, and specialised services.
Accessibility	The geographic location of clients and services and what transportation is necessary for one to reach the other, including costs of transport and travel time required.
Accommodation	The relationship between the systematic organisation of supply resources, such as appointment bookings and opening hours and how well clients can accommodate these systems.
Affordability	The relationship between price of services and client's ability to pay, taking into account health insurance policies and if clients have health insurance. This is where perceptions of worth are discussed given the total costs of the services they are paying for.
Acceptability	The attitudes that clients have regarding the characteristics of service providers and the attitudes that service providers have towards characteristics of their clients. Such factors can include: ethnicity, age, gender, and religious identification.

These dimensions provide a framework with which we can examine how and why people choose between different services. Preferences in regard to different healthcare services, can be unpacked to understand the specific factors that individual clients take into account when making decisions.

2.6 Local Biologies

Knowledge of the body, and by extension, illness, and treatment is fundamental in shaping parental expectations and preferences for treatment-seeking pathways. Understandings of illness, or the embodied experience, are informed by factors that impact on the material body, such as the environment or pathogenic agents, and social factors, such as local and biomedical categories of knowledge. Together this results in 'local biologies' (Lock, 2001). These biological and social processes become intertwined, resulting in differences in the way people understand and experience their bodies (Lock et al., 2011). Local biologies can also be shared by certain groups of people but can differ according to personal context and experience (Lock, 2001).

Biomedical understandings of the body are rooted in what can be seen and what can be made visible to biomedical practitioners (Foucault, 2003). Even though something may be 'invisible' and hidden deep in the body, the priority of biomedicine is to make these areas 'visible' and well-understood. Biomedicine is often seen as highly empirical, with symptoms being generalised amongst many groups of people (ibid.). However, without understanding the sociocultural context in which a body presents itself, disease cannot be fully understood, and the body not truly 'seen' (Street, 2014). Local biologies often reflect tensions between a person's own understandings of the body and that of biomedicine. This can impact how and when treatment-seeking begins, progresses, and resolves.

3 Methods & Methodology

Our research took place over 4 days, conducting focus groups discussions (FGDs) and interviews with 57 parents (Table 2). We further interviewed 6 nurses, 1 KK medical officer, 1 paediatrician on duty at Hospital Segamat, 1 GP, and spoke with public doctors lecturing at the Jeffrey Cheah School of Medicine and Health Sciences, Monash University Malaysia. We used purposive sampling to select participants through SEACO, utilising snowball sampling in two ways. First, SEACO contacted kindergarten teachers at our research sites who in turn recruited parents in the area with at least one child under 7 years of age. Most of our participants were mothers in their 20s and 30s with a child in the specified age range, however, we also met with a number of grandparents, and parents with children older than 7. Second, we used SEACO's contacts to speak with biomedical professionals, for example, a contact introduced us to medical students at Hospital Segamat who in turn made contact with the paediatrician on duty.

Table 2: Location, number and family role of participants. All participants had children under the age of 7, except for two grandparents.

Location	Jabi (specifically Felda Pemanis 1 & 2)	Sungai Segamat	Chaah
Participants	26 mothers 1 grandmother	15 mothers 1 father 1 grandfather	12 mothers 1 father

We initially engaged participants (in groups of three to five) in free listing types of child illnesses, then ranked illnesses by severity, and used various mind-maps to analyse different behaviours and perceptions relating to these illnesses. We were flexible in letting the conversation evolve in a semi-structured way – mind-mapping was particularly useful in this regard. While running FGDs we often had to adapt our sessions to accommodate late arrivals or separately interview participants who were comfortable speaking English. We also reviewed our question line by iteratively discussing some of the emerging themes whilst debriefing our data over the 4 days.

Ethics approval was received through Monash University prior to the study commencing; furthermore, written and verbal consent was obtained from participants. Throughout we ensured that the purpose and eventual uses of our data was explained to participants so that they could provide informed consent. We also sought to ensure participants were not compelled to disclose sensitive information to fellow parents, asking them, for example, questions about what (hypothetical) illnesses they were concerned their children might suffer from, rather than to solely list those they have had.

The research team included five Monash University Students and three staff from SEACO who aided in designing our study and providing an understanding of the cultural context. Both students and staff worked on developing translations and translating in the field.

4 Findings and Discussion

4.1 The Roots of Care: Knowledge and Understanding

4.1.1 Understandings of illness and treatment

Our findings suggested that illness was highly experiential, and that there was a focus on the tangible aspects of illness. Fever, cough, and flu were mentioned by parents as the main illnesses their children contracted or the ones they were most concerned about.

Interestingly, within a biomedical understanding, fever and cough are *symptoms* of pathological disease, often of URTIs, rather than a disease in their own right—they are physical signs of a ‘deeper’ causative agent doing harm within the physical body. This focus on symptoms and physical phenomena can be understood as a local biology, as participants came to know their own body, and that of their children, through the experiences of illness.

Although Heggenhougen (1980) suggests Malaysians are interested in ‘why’ people become ill, our findings indicate that the community are more concerned with the ‘how’ and ‘when’; a focus on the ‘visible’ experiences associated with illness rather than the ‘invisible’ causative agents. This experiential component creates an urgency to treat illnesses such as fevers in a time-sensitive manner. Parents had different methods for managing fever at home but all related to temporality. One mother in Sungai sought a doctor after 4 hours of fever, another waited until the late afternoon. Extending from this time-sensitive approach, many parents explained to us that antibiotics rapidly broke fevers. This concern is further explored in a later section.

We probed into parents’ understanding of how antibiotics work, however we encountered some resistance, due to potential confusion and perceived judgement. What was apparent, however, was the belief that antibiotics were effective and fast-acting, and could be

attributed to a child's "speedy recovery".² We saw parents' need for time-sensitive treatment persist throughout the treatment-seeking process.

4.1.2 Prevention and home remedies

The prevention methods discussed by participants were very similar between ethnic groups, with the main difference being preferences for supplements. A clean house was mentioned by nearly all participants, but we did not probe to see if this included hand-washing practices, established by WHO as a critical infection prevention method (Allegranzi et al., 2013). This biomedical prevention method may have been commonplace, however most parents described to us prevention methods rooted in traditional understandings of knowledge. These included a healthy diet, avoiding cold weather and cold foods, as well as avoiding foods that made their children sick in the past, mirroring the importance of past experience discussed previously (Anwar et al., 2014). These prevention methods, rooted in ideas like humoral theory, suggest that local understandings still play a role in the embodiment of illness (Anderson, 1984; Manderson, 1987; 1998). This is not to say that biomedicine is not understood, just that traditional knowledges are centred.

Home remedies are generally perceived to be slow "because they take time"³ and therefore conflict with the notion of "speedy recovery", driving a preference for prevention. It is worth noting that prevention and home remedies are often rooted in the same understandings of the body and so can appear similar. As seen in the literature, many societies and ethnic groups use home remedies to treat minor illnesses, however home-based treatment is an understudied area of health-seeking behaviour (Anwar et al., 2014). We saw that home remedies are used in hopes of stopping an illness from escalating; if the illness increased in severity, further biomedical action was taken – this could be further studied.

² This expression was stated in English in Felda Pemanis 1, and became a common translation.

³ Quote from a mother in Sungai Segamat. Similar sentiments shared by a father in Chaah and participants elsewhere.

As noted by Heggenhougen (1980), biomedical and traditional practices coexist in Malaysia; medical pluralism is widespread. Some participants do not disclose home remedies and supplements to their doctors, however the GP and hospital paediatrician we interviewed were not concerned with the use of home remedies, but desired transparency and open dialogue. The coexistence of medicines was highlighted by one participant from Chaah, who was the daughter and granddaughter of biomedical doctors, and used home remedies growing up, stating: “there’s home remedies for everything [sic]”.⁴

Although there is co-existence of some methods, such as Vicks being used by all ethnicities, some traditional treatments are ethnically distinct. Betel leaf is strictly an Indian treatment, Chinese herbs are used by the Chinese group, and the topical use of tamarind and turmeric is Malay. These treatments do not cross over ethnic groups, whereas biomedical treatments and traditional treatments mix together. Biomedical medicine dominates healthcare and permeates all ethnic groups.

4.2 Shaping the Journey: Influences on Treatment-seeking

4.2.1 Past experiences

Although not always directly asked, it is clear that previous visits and experiences at the KK and the GP inform parents’ treatment preferences. When discussing their preferences, some participants explained why they thought one pathway was worse than the other—for example, participants recounted their bad experiences at the KK rather than explaining what was good with the GP. Parents often discussed previous experiences in which they had received poor service, with eight participants mentioning they preferred GPs because they did more thorough examinations compared to the KK. Medication prescribed to parents either by the KK or the GP then influenced their preference moving forward, often to use another service if the medicine ‘didn’t work’.

⁴ Shared by a participant in Chaah.

Some participants, who continued to utilise both the KK and the GP, determined the services they received from both according to past experience. One participant took their son who was suffering from tonsillitis to the KK where it was not resolved by treatment. Whenever their son’s tonsillitis recurs, they now only take him to a GP. Poor experiences with the first GP encouraged them to find another GP whom they were happy with. If their children are sick with minor illnesses, however, they still take them to the KK; their past experience developed their trust in the KK to deal with treating some illnesses. Treatment-seeking can therefore be a reactive journey highly attuned to contextual factors.

4.2.2 Pathways of treatment

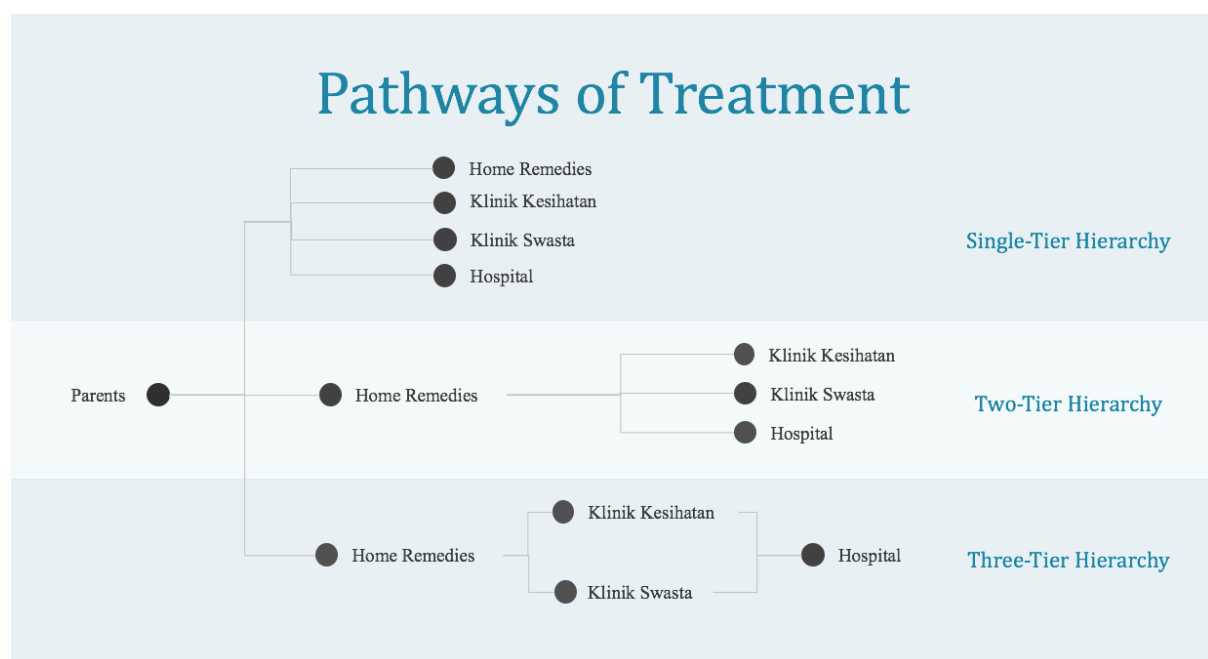


Figure 1: Parents can engage in several pathways when seeking treatment. Choice of pathway may be influenced by severity of children’s illness or factors of access.

Upon gathering opinions from 57 participants, we identified three pathways that parents tend to follow in the process of treatment-seeking for their children. As depicted in figure 1, these three pathways are named and distinguished by the number of processes involved and their sequential order. Both the two-tier hierarchy and three-tier hierarchy pathways portray a flow of escalating severity, where parents would apply home remedies or take

their children to a local medical practice first then later seek further treatment from a different and often more sophisticated medical practice in cases of persistent illness. Nonetheless, distinctive from the two-tier hierarchy pathway, the three-tier hierarchy recognizes the hospital as a higher-level medical facility than Kks and GPs. Unlike the previous two pathways that involve visits to multiple medical practices, the single-tier pathway consists of visits directly to one medical practice only; a KK, GP, or hospital.

When asked 'what would you do when your children have flu, cough and/or fever?', the response from most participants were in line with the two-tier and/or three-tier pathways.⁵ Many participants indicated that they would only take their children to a particular medical facility – which could be a KK, GP or hospital – on the basis of factors such as cost, location, opening hours, and quality of treatment. For instance, one mother from Sungai Segamat mentioned that she only takes her children to the GP as it has flexible opening hours that would fit her children's school schedule. Similarly, one participant from Felda Pemanis 1 who only has one child, asserted that she only goes to the hospital as it provides better and more reliable treatment in comparison to the KK and GP; this parent was likely more protective of their only child. By understanding parents' treatment-seeking trajectories, we noticed that several processes involved in their pathway of treatment, particularly how many medical practices they visit, were largely motivated, and shaped by eagerness to improve their children's health and their personal perceptions of the medical practice.

These findings are in line with Penchansky and Thomas' (1981) theory of access discussed above. Factors shaping access include their socioeconomic status, geographical location of the practice, waiting time at the clinic, and cost of treatment (Saurman, 2015). For example, participants in all three communities commonly mentioned that there is usually a long queue at the KK and it closes early which essentially drives them to the GP with its much shorter waiting time and flexible opening hours, i.e. the dimension of accommodation.

⁵ Typically the second question from our question line, following a free-listing activity of children's illnesses.

Interestingly, we found that expectations for the effectiveness of treatment also has an impact on the selection of medical practice. A majority of participants among all three communities believed that medicine obtained from a KK is less effective than that from a GP as they thought it would take longer for the illness to be cured. In addition, one participant mentioned that GPs prescribes medicines that are challenging to obtain from a KK or in lower doses, namely antibiotics.

4.2.3 Implementation of treatment

When parents commit to a pathway of treatment they must then work in conjunction with practitioners to determine the next steps in the treatment process. We quickly observed that the relationship between parents and practitioners often involves shifting asymmetries of knowledge, which shape how treatments are enacted.

Many participants answered automatically that they trusted doctors in their knowledge and ability to choose the best treatment option. However, the responses regarding trust and observing doctors' instructions should be interpreted within the context of the etic methodology used. The manner in which we framed the questions and translations, could have resulted in participants answering differently to their actual emic view. This could be due in part to a social desirability bias where it seemed that trusting the doctor was the answer the participants believed we wanted to hear. In some cases, a few participants asked our field team how to cure specific illnesses, such as asthma, believing we were doctors. This could have impacted upon participants' answers in relation to questions about doctors as we were viewed as the subject of our enquiry. This meant that there was a potential power discrepancy between us and the participants akin to that between the participants and their doctors, especially in earlier sessions before we realised the need to clarify our role. We should have outlined our role more specifically to establish a more transparent relationship earlier in our fieldwork.

We also observed that parents have high regard for biomedical expertise, but it is influenced by their own understandings of the body and illness - their local biology. In

contrast, much of the literature describes a phenomenon of parents believing they know what is best for their child which can cause parents to not follow professional biomedical advice (Hain, 2018). Whilst some participants in our study revealed that they did not always act in ways their doctor suggested, they still claimed to follow the intentions of the doctor's instructions. For example, two participants explained they would see the GP and take the antibiotics prescribed but then would throw them out if they decided they did not want their child to take them. This could be due to a view that whilst the doctor is knowledgeable on treatment methods, the individual child, and the success of those treatments on them is specific to the individual body. They still perceive the advice of the doctors as trustworthy, but they adapt it to their own or their child's body. Other examples include:

- A participant discussed the idea that the success of certain treatments is determined by the specifics of an individual's physical body. He explained that his wife did not take any medication because "her body is different" and therefore she does not need to, unlike his daughter.⁶
- We encountered participants who would stop a course of antibiotics early because the symptoms of the illness resolved. Conversely many participants were adamant that the course of antibiotics must be finished. In both cases the doctors had given instruction on how to use antibiotics. This highlights the weight different parents give to professional biomedical opinion compared to their own understanding, and tensions within their local biology.

This balance of parents' own understandings, and those of doctors, could explain why, if the child's illness persisted, parents in all cases defaulted to seeking out biomedical expertise. Again, the expectations that accompanied visiting biomedical professionals differed between participants. Responses varied as to whether they expected to receive medicine of any sort, antibiotics, or purely the expert advice of the doctor. Those who did expect to receive medication of some kind, such as a cough syrup or antibiotics, often saw a visit to the doctor that didn't provide them with these to be a wasted visit. In this way access is limited by affordability (Penchansky & Thomas, 1981) as participants learn from past

⁶ Shared by a father in Chaah

experiences they are less likely to want to waste money on a visit that does not meet their expectations. For these participants, perhaps the inherent value of the doctor is as a source of medication which represents caregiving. In this way medication could be thought of as the ‘actual carer’ which is invoked after visiting a biomedical professional (Willis & Chandler, 2018). As the ‘actual carer’ medication is the object that is caring for the individual as opposed to another human individual performing the care (ibid.).

4.3 Preconditions of AMR: Antibiotics in the community

4.3.1 Identifying preconditions

Self-prescription, over-prescription, and misuse of antibiotics were the key preconditions of AMR we investigated (Hardon, Hodgkin & Fresle, 2004). In many middle-income countries, including Malaysia (Alabid et al., 2013), access to over-the-counter antibiotics from pharmacies often drives self-prescription. However, there was no indication that any of the parents in our study self-prescribed antibiotics in this way. In fact, some parents said they were hesitant even to purchase cough syrup from pharmacies because pharmacists “aren’t doctors”.⁷ This reaffirms the idea that parents place some form of trust in biomedical advice.

4.3.2 Over-prescription & misuse

Our data suggests over-prescription of antibiotics is common. Parents frequently said GPs provide them with antibiotics when their child has symptoms of URTIs. The view that GPs prescriptions were “always antibiotics” was mirrored in interviews with public KK nurses and hospital staff.⁸ Surprisingly, however, parents claimed they almost never *requested*

⁷ Shared by mothers in Felda Pemanis 2

⁸ Shared in English by a mother in Felda Pemanis 2, and repeated in Chaah. Biomedical professionals were somewhat hesitant to comment on prescribing practices they were not familiar with, but had seen GP prescriptions parents brought into public facilities.

antibiotics from GPs, and a GP we spoke with in Sungai Segamat supported this claim. While we suspected there may have been ‘consumer pressure’ from parents for antibiotics, it seems that parents and doctors alike believe antibiotics are very often part of the treatment process for common childhood illnesses. This pharmaceuticalisation of care may lead doctors to prescribe antibiotics as a precautionary treatment for URTIs, driving misuse. This may be exacerbated when diagnostic technologies are limited, such as in the Felda Pemanis KK, where the cause (viral or bacterial) of URTIs is harder to ‘make visible’. Instead of a consumer pressure on doctors to prescribe antibiotics, parents *and* doctors appeared to provide pressure from both sides and are both compelled to overuse antibiotics due to anxieties over time to recovery; a ‘speedy recovery’ (Chandler et al., 2016, p.11).

4.3.3 Completing the course

Recent studies suggest that completing a course of antibiotics is not necessary to prevent resistance, and could in fact worsen AMR (Llewelyn et al., 2017; Crémieux et al., 2003; Lodise et al., 2007). In many FGDs, parents said that doctors encourage them to ensure children complete a course of antibiotics - this was advice they followed (31 of 39). Many parents even stressed “you must finish it” in English.⁹ However, some elaborated further in ways that suggested they did not complete the course and were initially just agreeing with the group – another reminder of the public and etic nature of FGDs. We did not observe notable differences between attitudes of parents in rural and urban areas towards completing the course. However, Hospital Segamat and the Felda Pemanis KK took a conservative approach to prescribing antibiotics, and parents described these courses as quite short – only a few days. This was also repeated in interviews with paediatricians, nurses, and medical officers, which, as described above, suggests structural factors (of rurality and public funding) limit overly long courses, lessening the preconditions of AMR in contexts such as the Felda Pemanis villages.

⁹ Stressed in English by a mother in Felda Pemanis 1. “Always finish” was also stated in English by a mother in Chaah.

4.3.4 Awareness of AMR

It should be noted that the Malaysian Action Plan on AMR has not been implemented in Segamat, with only some biomedical professionals aware of such regulation. Typically, stewardship focuses on the prescribing practices of these professionals, overlooking the community, yet we observed parental concerns about AMR. Almost all our participants could recognise the rapid and effective actions of antibiotics, valuing them highly as tools of caregiving. In some cases, parents demonstrated awareness of AMR, with concerns that overuse of antibiotics might make the “... medicine not work for next time”.¹⁰ Our observations stand in contrast to many papers in the literature which blame ‘irrational’ antibiotic usage on public ignorance (see for example, Ling Oh et al., 2010; Ilić, Jakovljević & Škodrić-Trifunović, 2012; Littmann & Viens, 2015, p. 215). Instead our data suggests that culturally-grounded approaches to stewardship campaigns might encourage appropriate antibiotic use at the community-level.

5 Conclusions and Future Research

5.1 The conclusions of our findings

The way treatment is sought and enacted in Segamat is clearly a complex process. Amongst children, and at the community-level, the misuse of antibiotics for viral and self-limiting diseases such as URIs is a major concern. Knowledge, and the way knowledge is acquired, shapes the intentions and directions of treatment-seeking and how antibiotics are embedded in ideas of care. As we have described, pathways of treatment-seeking are altered by structural factors, such as the funding limitations of rural KMs or distribution of GPs along socioeconomic lines. The reactive nature of parents’ journeys of treatment-seeking mean that all of these factors influence parental decision-making. The various conceptual approaches to care, and social or geographical forces, enact treatments and actions of care in Segamat, both contributing to, and lessening, the preconditions of AMR.

¹⁰ Quote from a mother in Sungai Segamat. A grandmother in the group agreed with this statement adding “... [won’t] function on same illness”.

Much of the treatment-seeking journey is characterised by learning; it is a process by which parents come to know both illness and medicine through new experiences which can clash or compliment their previous behaviours, preferences, and even their local biologies.

5.2 Directions of future research

Future research into perceptions of antibiotics could further explore ideas of using antibiotics as a precautionary measure when causes of illness are unclear. Investigations of these prescribing practices could take the form of a simulated patient study (see for example, Alabid, Ibrahim & Hassali, 2013). Additionally, qualitative research could further investigate the temporal aspects of treatment-seeking and how these relate to perceptions of antibiotics as rapid and effective.

6 Acknowledgements

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7 Reference List

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