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We're not doctors and nurses: The teacher's role in the management of anaphylaxis in primary school settings

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Worldwide the prevalence of severe and life threatening allergies is rising. In 2007 35% of Victorian schools had students at-risk for anaphylaxis (Office of the Premier), and three children have allegedly died from anaphylaxis in Australian school and early childhood education settings during the last six years alone. Teaching personnel are increasingly responsible for the safety of severely allergic children, yet there is a dearth of research examining anaphylaxis management in Australian educational and child-care facilities. This study examines the teacher's role in anaphylaxis management through in-depth interviews with 12 Victorian primary school teachers. The resulting data indicate that teachers' roles in anaphylaxis management were complex, multifaceted, and emotionally demanding. Stress and anxiety were strongly associated with the onus to prevent a reaction, and to provide medical care in the event of an emergency. Participants considered such responsibilities beyond the reasonable parameters of teacher duties yet an increasingly common expectation in a teaching climate characterised by work intensification. Stress and coping was impacted primarily by a number of local sociocultural factors such as the attitude of parents and colleagues. Factors identified in previous literature were also significant, namely, clear policy and procedures; and practical considerations such as teacher education and safety measures.

Keywords: anaphylaxis, anaphylaxis management in schools and early childhood education settings, teachers, roles, work intensification and personal practical knowledge

INTRODUCTION

In recent years the issue of anaphylaxis management within schools and early childhood education settings has attracted considerable attention. In 2002, 13 year old Hamidur Rhamadan died after eating peanut butter on school camp in New South Wales (Fittall, 2006). In 2004, Alex Baptist died at a Victorian kindergarten, allegedly as a consequence of exposure to peanuts (Gibson, 2006a). Such tragedies have generated extensive media coverage and community concern regarding the ability of schools and early childhood education settings, and more specifically, teachers to provide a safe environment for anaphylactic children. According to Rosalie Kinson, vice-president of the Australian Education Union- Victorian Branch, 'teachers are working under incredible stress and pressure, with a range of workload issues, and the complexity of health and learning issues that children bring' (Kinson quoted in Gibson, 2006b, p. 11). Gibson (2006b) claims that teachers themselves say 'they lack the training and support to cope' (p. 11).

In the past 5 years, Australian State Governments have introduced a number of initiatives

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designed to prepare educational staff for the management of anaphylaxis, and to guide schools and early childhood education facilities in the implementation of preventative measures and emergency responses. The Victorian Government has been particularly proactive, legislating minimum safety standards and compulsory anaphylaxis education for staff in schools and children's services with 'at risk' students enrolled (Office of the Premier, 2007). Yet, there has been scant research examining anaphylaxis management in Australian school and early childhood settings, and more particularly, the teacher's role in maintaining a safe environment for anaphylactic students. This small-scale study was an early attempt to bridge this gap in research and practice.

BACKGROUND TO THE STUDY

Theoretical framework: *Teachers' work and knowledge*

To comprehend the issue of anaphylaxis and the teacher's role in its entirety, we began with an examination of the current teaching context and the knowledge that informs teachers' roles and work. The following discussion outlines the theories framing this study.

Intensification and the changing role of the teacher

The past 50 years has seen a plethora of changes impacting upon the work of teachers locally and on an international scale. Globalisation, increased market competition, the 'technocratisation of schooling' (Cranston, 1998) and evolving social change have delivered an increasingly complex and demanding workload for teachers, while paradoxically, an era driven by capitalism, economic rationalisation and the impetus to reduce labour costs, has produced cuts to teacher numbers and resources, and a workforce characterised by increasing casualisation and instability (Bartlett, 2004).

Apple (1982) describes the intensification of teachers' work as the:

> Bureaucratically driven escalation of pressures, expectations and controls concerning what teachers do and how much they should do within the teaching day
> (cited in Hargreaves, 1994, p. 1)

In short, educators must impart subject knowledge, act as facilitators for learning, care for students' social, emotional and medical needs, implement multiple innovations and contend with increased paperwork, administrative and extra-curricular responsibilities (Esteve, 2000; Hargreaves, 1994).

Roles are no longer clearly defined, and ambiguity is pervasive, a factor which Bacharach, Bauer and Conley (1986) found contributes to stress. While Bartlett (2004) acknowledges that some teachers who embrace expanded work roles experience greater job satisfaction, the literature overwhelmingly points to intensification and overload as a source of stress, guilt, anxiety and disenchantment with work (Bartlett, 2004; Esteve, 2000; Hargreaves, 1994; Lohman & Woolf, 2001; Van Veen, Sleegers, & Bergen, 2001).

In such a context, anaphylaxis is merely one concern of the numerous emergent medical issues facing today's teaching community. As Peshotan and Vaswani (1999) observe, the teacher's role has expanded 'to include that of paediatrics nurse' (p. 298) in the sophisticated judgement and complex knowledge of immunisations, childhood disease, developmental milestones and first-aid care required. It is not surprising then, that Victorian AEU Vice-president Rosalie Kinson claims 'teachers are working under incredible stress and pressure, with a range of workload issues, and the complexity of health and learning issues that children bring' (Kinson quoted in Gibson, 2006b, p. 11)

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In attempting to understand the teacher's role we considered Freema Elbaz's proposal that:

> The single factor which seems to have the greatest power to carry forward our understanding of the teacher's role is the phenomenon of teachers' knowledge (1981, p. 45).

Personal practical knowledge

On the subject of knowledge we espouse Elbaz's proposition that teachers have a largely unarticulated knowledge base which guides their work. This knowledge is mediated *by* practice and *of* practice, in that it is broadly based on teaching experience and directed towards addressing problems encountered in the learning environment. Furthermore, we adopted Clandinin and Connelly's conceptualisation of *personal* practical knowledge (1988) which includes the 'personal past history, understanding of human affairs, and all of the cultural understanding any teacher brings into the classroom' (Clandinin cited in M. Johnson, 1989, p. 362).

In the context of anaphylaxis, such knowledge is pragmatic and guided by a combination of theoretical understandings and personal experience. Johnson (1989) notes that while the personal aspect of practical knowledge is largely implicit and private, there is 'no good reason why personal knowledge cannot be made public' (p. 363). An account of one person's practice and understanding of the world can have important implications for the general body of knowledge. Accordingly, a key component of our investigation was to elicit this personal practical knowledge in relation to managing anaphylaxis in the educational environment.

Ultimately, our proposition was that changes in teachers' roles as a result of 'intensification' would significantly influence teachers' perspectives in relation to their role in anaphylaxis management, and ability to fulfil this role (functioning). Furthermore, we proposed that personal practical knowledge, particularly that gained in the work context would impact considerably upon the anaphylaxis understandings and practices of teachers in this study. We now progress to a closer examination of anaphylaxis in school and early childhood settings.

What is anaphylaxis?

The Australian Society of Clinical Immunologists and Allergists defines anaphylaxis as a severe and sudden allergic reaction involving multiple body organs or systems, most notably the respiratory and cardiovascular system (ASCIA, 2005). An allergy occurs when the body produces an immune response to an essentially harmless substance (e.g. pollen or peanuts) known as an allergen[i]. The primary allergens responsible for anaphylaxis in children comprise foods and insect venom (see ASCIA, 2005; Boros, Kay, & Gold, 2000; Jevon & Dimond, 2004; Mehl, Wahn, & Niggemann, 2005; Pumphrey & Stanworth, 1996; Vadas, 2003). According to the Victorian Anaphylaxis guidelines (2006b), peanuts, tree nuts, egg, soybeans, cow's milk, wheat, fish and shellfish are responsible for 90% of allergic reactions in Australian children.

Although the prevalence of anaphylaxis in Australia is unknown, the diagnosis in children is undoubtedly increasing. According to Dr Mimi Tang, Melbourne's Royal Children's Hospital has seen a three-fold increase in anaphylaxis admissions over the past four years (N. Johnson, 2007). The Office of the Premier claimed in 2007 that 35% of Victorian schools have students 'at-risk' for anaphylaxis. Although deaths in children are rare (the childhood mortality from anaphylaxis is unknown) (Boros, Kay & Gold, 2000), Sampson's (1993) study into fatal reactions found four out of six fatal reactions among children had occurred in the education environment. Consequently, understanding and managing anaphylaxis has become a priority for school and early childhood personnel.

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The management of anaphylaxis in schools and early childhood education settings
The body of literature examining anaphylaxis management in schools and children's services is sparse. Inferences may be drawn from Boros, Kay and Gold's seminal work with South Australian school children in 2000, as well as studies conducted across the United States, Europe and the U.K. These reveal four key themes in the effective management of anaphylaxis within schools as seen in Figure 1.

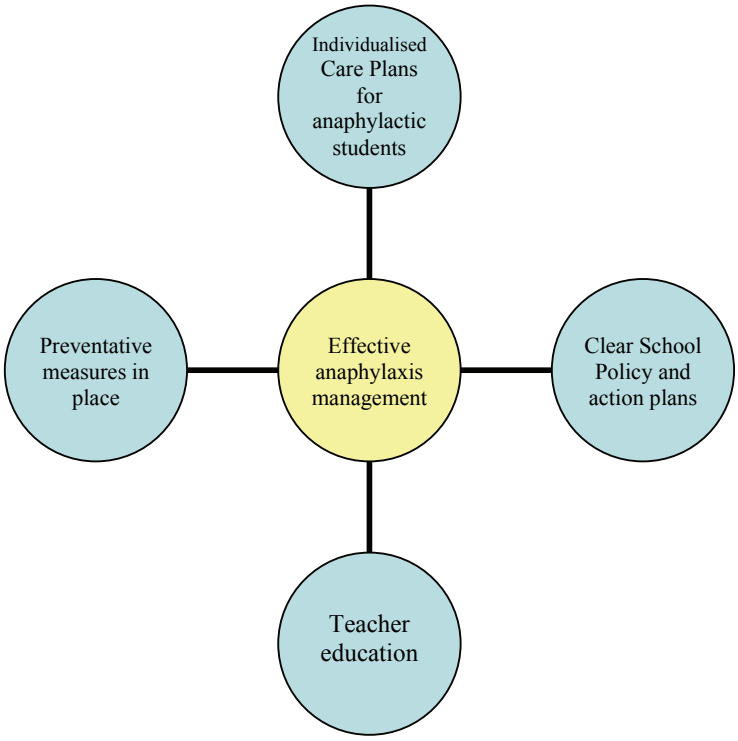

Figure 1: Key concepts in effective anaphylaxis management within schools: A summation of the literature

Teacher education
According to Boros et. al (2000) and Hourihane (2001) teacher education regarding the signs and treatment of anaphylaxis is essential in preventing emergencies, yet historically studies have shown inconsistencies within anaphylaxis education. Sheetz et al. (2004) believe that 'school personnel often remain unaware of specific issues surrounding management of children with life-threatening allergies' (p. 156). UK researcher Watura (2002) found that 'schools are not sufficiently well informed about nut allergy and management of acute allergic reactions' (p. 240).

Preventative measures
Hourihane observes that 'management of anaphylaxis is more than management of the event itself' (Hourihane cited in Colver, 2006, p. 498). Hay, Harper and Moore (2006) identify the

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importance of regularly cleaning surfaces to prevent contact with allergens and planning ahead for excursions and playground activities. Scanning food labels for hidden allergens is another preventative measure. Munoz-Furlong (2004) claims 'reading labels is the cofrnerstone of avoiding a reaction' (p. 269), yet according to international research, teacher education is severely lacking in this respect (Rhim & McMorris, 2001; Watura, 2002), and many products are poorly labelled (Munoz-Furlong, 2004).

Clear school policy and action plans

Authors Munoz-Furlong (2004), Jevon and Dimond (2004), Morritt and Aszkenasy (2000), Moneret-Vautrin et al. (2005), McIntyre et al. (2005), Hay, Harper and Moore (2006) and Boros et. al (2000) emphasise the importance of accurate policy, emergency protocols (action plans) and comprehensive guidelines in preparing to support anaphylactic students.

Individual care plans

Individual care plans (ICPs), also known as Personal Care Plans and Individual Management Plans, are documents specific to each allergic student which are drawn up in collaboration with the child's parents and doctor. The plan documents the allergy, specifies the risks, and provides information concerning the symptoms and first-aid steps to be taken in the event of an emergency. (see Hourihane, 2001; Jevon & Dimond, 2004; D. Moneret-Vautrin et al., 2001; Rankin & Sheikh, 2006). There is currently no standard ICP document, and while implementation is mandatory only in Victoria, research validates ICPs in reducing the risk of morbidity and mortality (Moneret-Vautrin et. al, 2001).

The teacher's role in anaphylaxis management

The teacher and early childhood educator's duty of care requires that staff protect students from risks of injury that are reasonably foreseeable (Department of Education, 2006, Section 3.2), and administer first-aid when necessary (Department of Education, Year Unknown, Section 4.5.1). Nancy Sander, President and Founder of the American Allergy & Asthma Network Mothers of Asthmatics (2002) contends that,

> Educators are not medical professionals. Yet teachers and other school staff often administer medications and make medical assessments for students with chronic and potentially life-threatening diseases. (p. 593)

This is particularly the case in anaphylaxis where for early childhood educators, the onus lies not only in monitoring the environment to prevent exposure to allergens, but also in identifying a reaction and administering life-saving adrenaline via an EpiPen[ii] if necessary. The impact of such responsibility has not been examined in the anaphylaxis literature to date. Nevertheless, insight into the psychological burden of anaphylaxis (Primeau et al., 2000) is provided by international studies with parents of anaphylactic children (see Hu, Kerridge, & Kemp, 2005; Mandell, Curtis, Gold, & Hardie, 2005; Primeau et al., 2000). In Hu, Kerridge and Kemp's work (2005), the term 'anaphylaxis anxiety' is coined, meaning a state of anxiety related to the responsibility for an anaphylactic child, and the perceived risks to that child's safety. The authors also acknowledge that a degree of anxiety can be productive, motivating parents to employ preventative safety measures. However, significant stress arose from 'the strain of constantly anticipating and avoiding the triggering of the next episode' (p. 333). Parents reported that key factors for coping comprised a positive attitude, support from others, public awareness, and the provision of adequate medical information (Mandell et al., 2005).

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In the broader health and safety context, inferences may also be drawn from McCarthy, Williams and Eidahl's qualitative work examining teachers' responses to chronic health conditions in the classroom[iii] (1996). Here, predominant concerns involved knowing how to handle unanticipated emergencies. Teachers cited the school nurse as the most valuable resource informing their preparation[iv] and parents were also considered a valuable source of information and support.

Methodology

This study was grounded in the ethnographic tradition, consequently and focussed on cultural interpretation. We sought to document the attitudes, perspectives and practices within the teaching culture. Open-ended interviews constituted the hegemonic research method with the rationale that 'other instruments focus on the surface elements of what is happening while interviews give the researcher more of an insight into the meaning and significance of what is happening' (Wilkinson and Birmingham, 2003 p. 44). Field observation and document analysis (of policies and procedures) served to add contextual detail and triangulate findings and statements apparent in the interview data.

To recruit participants, five school principals or vice-principals known to the researchers were approached, all of whom consented for their school to become a research site[v]. Three actively recruited teaching staff with anaphylactic students and in another two sites classroom teachers approached potential participants on our behalf. Potential participants were issued with a letter of invitation. Twelve teachers returned their contact details to us through the gatekeepers, and consequently participated in the research. While this approach proved logistically advantageous, delegating informant selection meant we were unable to control the characteristics of the sample to a large extent. Hence, eight of the twelve participants taught at prep level. The 11:1 ratio of females to males was also higher than that of the broader teaching population.

Eleven of the twelve participants were distributed across five Government primary schools in the Eastern Metropolitan region of Melbourne. One teacher worked in a casual relief capacity and had no permanent school affiliation. Student numbers in school sites ranged from approximately 240 to 610 children, all schools had anaphylactic students enrolled[vi]. None of the sites had school nurses employed and in all settings teaching staff were responsible for providing first-aid care. Levels of teaching experience were broadly distributed, ranging from 8 months to over 20 years. Eight participants taught at prep level. Two participants taught all year levels in either a specialist or casual relief capacity, and two participants were based in the middle years (Grades 5 and 6).

Before the interviews commenced, the scope and purpose of the research was reiterated to participants, confidentiality was guaranteed and consent was obtained. Open-ended interviews were conducted in the manner described by Lofland (1971) as: a *'guided conversation whose goal is to elicit from the interviewee (usually referred to as the informant) rich, detailed materials that can be used in qualitative analysis'* (p. 76).

Discussions took place in the participants' own classrooms which proved to be ideal both in terms of maintaining confidentiality, minimising interference, allowing teachers to relax and affording the researchers a glimpse into the participant's teaching and learning context. Conversations were guided by the key research objectives, these being;

- to define the role of the teacher in relation to anaphylaxis;
- to explore teachers' functioning in their role; and
- to examine teachers' preparation to undertake such a role.

An interview guide framed discussions (see Table One). Interviews lasted from 30 minutes to 98 minutes, the average length being 50 minutes. During the course of each interview anecdotal notes

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were jotted and the discussion was recorded using a hand-held audio recorder. Each research site and participant was coded numerically to maintain confidentiality.

TABLE 1
INTERVIEW GUIDE

1. Tell me how long have you been teaching? What made you decide to join the profession?
2. In your experience as a teacher, do you see safety as an important issue for primary schools? Please explain. What do you see as the major issues for teachers in terms of safety?
3. When did you first come across an anaphylactic child? Did you have any policy or procedures in place at that stage?
4. What policy and procedures has the school got in place? Do you know these well? Have you had to put the policy into practice (personally)?
5. What training have you received in relation to anaphylaxis? What is your opinion of this training? In what ways has it impacted upon your practice and understanding in relation to anaphylaxis?
6. What else has helped you learn about anaphylaxis? (i.e. media, parents, resources)
7. Do you think having an anaphylactic student in your class/school has improved your awareness about the condition? How so?
8. Can you tell me about the anaphylactic students in your class/school? (i.e. triggers, severity, individual management plans)
9. What do you see as your role as a teacher with regard to these students?
10. In your experience, does having an anaphylactic student impact upon the classroom/school environment? Does it impact upon your teaching?
11. Is having an anaphylactic student in your class/school a source of concern/stress for you? In what way? How could this be addressed?
12. What do you think about graduates being given an anaphylactic student?
13. How do you feel about the prospect of giving the EpiPen in the event of a reaction?
14. How do you feel about taking on the role of a first-aider, or carer, as part of your teaching position?
15. Are you familiar with the Victorian Anaphylaxis Guidelines? If so, how?
16. Take your time to look through the roles and responsibilities of teachers set out in these guidelines and tell me what you think.
17. Are there any other experiences or issues you would like to tell me about in relation to anaphylaxis at school, that we have not already covered?

Data analysis was informed by Miles and Huberman's (1984) conceptualisation of qualitative analysis as data reduction, data display and conclusion drawing in an 'interactive cyclical process'

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(p. 24). We coded each interview transcript, focussing the data according to themes derived from the literature review and theoretical framework, new categories were added as patterns and themes emerged. Here we used Lofland's (1971) method of scissors, circling and filing/coding, which is similar to contemporary software such as NVIVO. We then examined the patterns, differences and similarities in stories to draw conclusions regarding themes within the data

During the data collection and analysis process we attempted to bracket our own ethnocentrisms as researchers, so as to reveal the data in its truest form. However we acknowledge the ethnographer can never claim to represent the truth in a final definitive sense. As Denscombe (2005) notes, a researcher's final account is a construction which inevitably owes something to the researcher's own identity, values and beliefs. Consequently scientific rigour in this study owed little to maintaining objectivity and negating personal influence. Rather, we followed Patton's advice to be 'balanced, fair and conscientious in taking account of multiple perspectives' (1990, p. 481) and endeavoured to confirm commonalities (themes) in the participants' accounts of their world.

Data presentation and analysis

We categorised the data for presentation in three sections according to the research objectives. The first deals with the teachers' role in anaphylaxis management. The second addresses teachers' functioning and factors influencing stress and coping. The third explores teachers' preparation to manage anaphylaxis and examines the role of personal practical knowledge.

Educator's perceptions of their role

In the absence of research literature we sought to elicit teachers own definitions of their role in anaphylaxis management. Although largely a shifting and subjective construct, nevertheless, themes became apparent in the roles teachers perceived for themselves. We defined these roles as protector, overseer, educator and quasi-medic.

Foremost, teachers perceived themselves as *protectors* of anaphylactic students in a physical sense. Preventative measures such as decontaminating surfaces, maintaining a nut-free environment, and reminding children to take their EpiPen to specialist classes were commonly cited aspects of the protector role and paralleled teacher responsibilities identified in the research literature (Hay et al., 2006; Watura, 2002). Protecting students' emotional wellbeing was also discussed. Participants detailed strategies to promote inclusion and acceptance during class activities and celebrations. Participant Eight identified that in providing a safe environment '*you need to be sensitive to their (the student's) needs and not unnecessarily draw attention to what it is that makes them different*', while Participant One saw her role as preventing labelling and potential bullying by educating the other children in the class.

Assuming the role of anaphylaxis educator was considered integral to promote awareness and autonomy in both children with anaphylaxis and their classmates. Participant Four asserted that even in Prep '*the children need to have ownership*', and Participant Two explained: '*What we are trying to do is to make them (the students) responsible*'. In evidence of intensification, teachers frequently became health promoters. Participants reported educating parents in the school community regarding the dangers of anaphylaxis, and in particular nuts. Newsletter articles, reminder notes in lunchboxes and information sessions run by teachers were commonly cited initiatives in this endeavour.

According to participants, the role of protector was emotionally demanding and engendered a profound sense of personal accountability. Informants, particularly in the junior grades, perceived themselves to be overseers, maintaining continual vigilance in the manner described by Participant One as '*trying to make sure he's not eating anything he shouldn't, and looking out for signs (symptoms) and just being aware*'. A strong connection was established between teachers' sense of personal responsibility and feelings of stress and anxiety. Such findings parallel the work of Hu, Kerridge and Kemp

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(2005), Primeau et. al (2000), and Mandell, Curtis, Gold and Hardie (2005) who identified stress and anxiety in parents of anaphylactic children. In Mandell et. al's study significant stress arose from 'the strain of constantly anticipating and avoiding the triggering of the next episode' (p. 332), an observation echoed by teachers in our investigation.

Participants identified unanticipated emergencies as a chief concern, consistent with teachers' reports in McCarthy, Williams and Eidahl's (1996) research regarding chronic conditions. Participants considered undertaking 'quasi-medical' duties such as CPR, first-aid and adrenaline (EpiPen) administration, a necessary, yet particularly stressful, aspect of anaphylaxis management, and an increasingly common requirement in the present teaching climate.

While teachers professed a pragmatic acceptance of such role expansion, anxiety and stress associated with intensification was evident. As an example, Participant Eight stated *'you are asking people to operate a fair bit out of their comfort zone and in one way I see it as almost an unfair responsibility that you are placing on people who didn't ever say that this is what they wanted to be responsible for'*. Such role conflict was reiterated in requests that *'parents realise we are not doctors and nurses'* (Participant Two) and claims by several teachers that permanent school nurses would be ideal. These comments support media accounts that teachers are learning specialists, not health experts, and are concerned about this aspect of their work (Gibson, 2006a).

Factors in stress and coping

Burchielli and Bartram (2006) define stress as 'an adaptive response to a work situation that places special physical and/or psychological demands on a worker (p. 313). According to Lazarus and Folman (1984, cited in Burchielli & Bartram, 2006), coping is the 'constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of a person' (p. 313). More generally, coping refers to how one manages stressful situations (Lazarus, 1966, cited in Burchielli & Bartram, 2006).

In this study, stress and coping in the role of protector for anaphylactic students was impacted by a multitude of factors. Participants cited particular challenges in fulfilling the protector role as environmental changes, for example, school camps, excursions, and classroom cooking. Issues of legal liability were also of particular concern. On camps and excursions, teachers noted the increased potential for exposure to allergens as children were removed from the controlled classroom environment, and the decreased level of support in the event of a reaction. In such situations, the burden of continual vigilance in the 'overseer' role was particularly acute. Likewise, in cooking activities, where the prospect of hidden allergens in food created additional anxiety.

Issues of legal liability generated universal concern, particularly in response to reported deaths in schools by the media. Here, the psychological pressures of intensification were particularly evident. According to Participant One: '*We've got so many responsibilities, duty of care is just massive, yet we are not nurses, we are not ambulance personnel that know what to do'*. Meanwhile, Participant Eight asserted; '*I'm wondering how long teachers will say that it's a fair thing that you ask them to do. Especially if you get a few more court cases where it's gone wrong, then teachers are left with no option but to say we can't take on that kind of responsibility'*.

In terms of coping with anaphylaxis in the school environment, previous research has focussed on teacher education, clearly articulated emergency procedures, and individual management plans, the importance of which was confirmed by our findings (see Hay et al., 2006; Jevon & Dimond, 2004; McIntyre et al., 2005; D. Moneret-Vautrin et al., 2005; Morritt & Aszkenasy, 2000; Munoz-Furlong, 2004). In all five sites procedures were in place to deal with an anaphylactic reaction and individual action plans[vii] were displayed prominently in staff areas and classrooms. This was reassuring for teachers. According to Participant Four;

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> 'I think legally we're covered. I feel that if I did everything here [points to procedure card] I am legally covered if I do that to the best of my ability. I'm also confident because it's supported by the principal and the parents have seen it'.

However, equally significant in participants' ability to cope as protector, were the presence of what we termed 'sociocultural factors'. These were contextual and relational factors that, by teachers own accounts, were instrumental in effective anaphylaxis management. Key themes comprised a) collegiate support and education, b) parental support and communication, and c) student attitudes. Figure 2 provides a summary of the data.

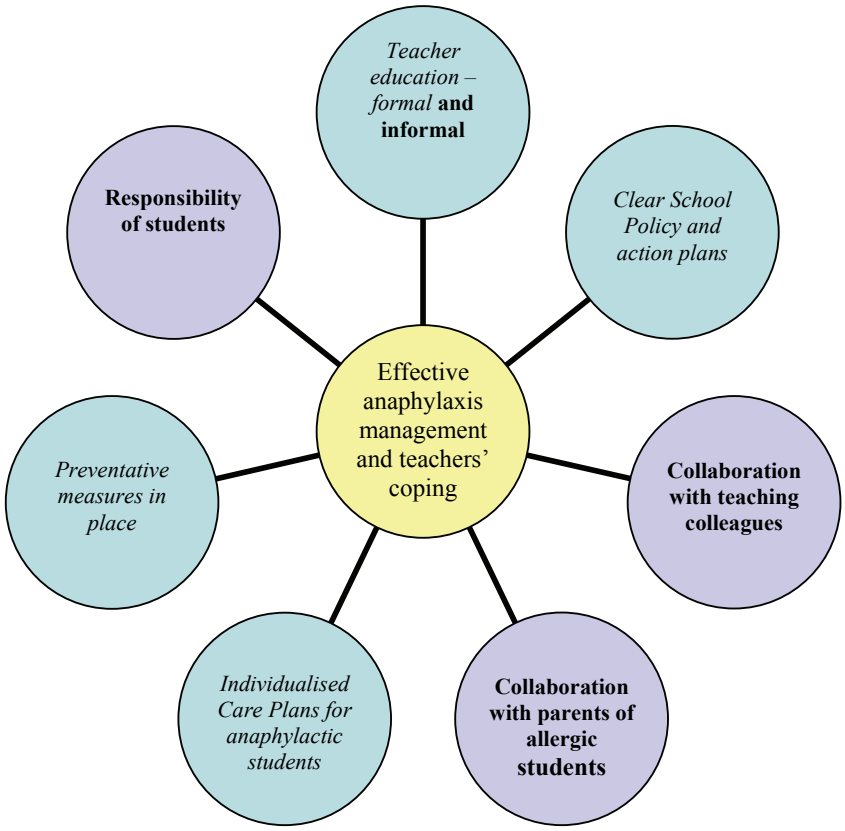

Figure 2: Summary of the constructs impacting upon anaphylaxis management and teachers' coping in the role of protector.

Key
-'*Italics'* represents themes previously identified in school-based anaphylaxis research literature.
-'Bold' indicates psychosocial themes revealed by the present investigation.

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A) Communicating with parents

Participants emphasised communication with parents of anaphylactic students as vital, similar to teachers in McCarthy, Williams and Eidahl's (1996) study with chronically ill students.

In our investigation, teachers felt more confident in their role when they considered themselves supported and trusted by parents. Participant Nine believed *'getting on really well with mum and dad'* decreased her anxiety. Participant Six felt *'lucky'* her student's mother was *'supportive and reasonable'* stating *'if the parent was really full-on that would stress you out even more'*. Parents of allergic students were for the most part proactive and contributed to maintaining a safe environment in a variety of ways. Practical measures such as accompanying a child on excursions, assisting in classroom cooking and ingredient selection, educating staff on a child's particular needs, and providing alternative nut-free treats for classroom celebrations, were perceived as particularly valuable. However, not all participants were supported in this way. Participant Eleven observed:

> 'My (anaphylactic student's) parents, apart from giving me the EpiPen, have never spoken about it which in some ways helps but in some ways it would be better if they said exactly what they want to happen. Like 'Tim' in Grade 2, his mum's up all the time but at least you know everything is done right because she tells you'.

B) Support from colleagues

The importance of collegiate support in both preventing and dealing with a reaction was emphasised. According to Participant Nine *'the more people with knowledge, the more likely it is that you'll get it right'*. Several school sites demonstrated a collaborative approach towards anaphylaxis management. The safety of allergic students was planned for and responsibility shared. However the experience of support was by no means universal. Many participants identified a lack of awareness and occasional lack of empathy on the part of some teachers not directly responsible for anaphylactic students. Participant Seven stated:

> 'We as a level team try and support (teacher with anaphylactic student) because we know what she is dealing with on a day-to-day basis, but we find it frustrating because we think the other people (staff) don't really appreciate what an issue it is'.

C) Student attitudes

The maturity and awareness of students had direct bearing on teachers' coping in the role of protector, and perceived ability to maintain a safe environment. Anaphylactic students were identified as unusually responsible and aware. In most cases children knew not to share food and to avoid allergens. As a result, the anxieties of the 'overseer' role were reduced considerably for teachers of these students.

Classmates' attitudes also impacted upon teacher stress and coping. Several classes were described as helpful and cooperative in maintaining a safe environment. This was particularly the case for teachers who had spent considerable time educating their students and promoting open discussion. Participant Four believed that classroom education manifested in *'a sense of caring and responsibility'* in the room. Other teachers cited similar stories. Participant Nine articulated the benefits of student education in that *'you've got a whole class full of eyes watching*' (for signs and symptoms).

Preparation for Anaphylaxis Management: The importance of education

Both formal anaphylaxis education and informal learning framed the practice of participants, and impacted upon stress and coping in the role of protector. Teachers were generally proactive about

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accessing information. Hu, Kerridge and Kemp (2005) believe that for parents of anaphylactic children, a reasonable level of anxiety stimulates coping mechanisms and a desire for information, a thesis we have tentatively applied to participants in the current investigation. Certainly, teachers were aware of the issues surrounding anaphylaxis management in schools, this contradicts Sheetz et. al (2004) and Watura's (2002) earlier contention that schools and their personnel are unaware of issues regarding anaphylaxis management.

Formal anaphylaxis education

Formal anaphylaxis education in the manner of seminar style education had been provided in every school site, and only the Casual Relief Teacher was unprepared. He stated *'As a CRT you lose out on PD (professional development)…you are not really aligned to any school and no-one is thinking too much about you'*. However disparity in the frequency of training, and participants' accounts of multiple providers, indicates that school anaphylaxis education was delivered in an ad-hoc manner.

Teachers considered seminar style training, as alluded to in the research literature (Boros et al., 2000; Hourihane, 2001), to meet their needs, and valued practical, hands-on education. Written information was considered of less value. Participant Three admitted; '*I probably would file it (written information) and not look at it again'*. Only one of the twelve participants was familiar with the Victorian Anaphylaxis guidelines, (Department of Education, 2006) despite each school receiving a copy in 2007. Recent graduates identified the absence of anaphylaxis education in their university teacher education, despite the calls of Alex Baptist's parents for its inclusion (Gibson, 2006a). Incorporating the Victorian Schools Anaphylaxis Kit into undergraduate education was posited by one participant as a tenable solution.

Informal education: The role of personal practical knowledge

In addition to formal anaphylaxis education, knowledge gained informally or 'on the job' was deemed critical in preparing teachers to cope in the role of protector. In this respect, the application of personal practical knowledge, that knowledge of practice guided by teachers' experiences (Elbaz, 1981), was particularly apparent.

Participants drew on a combination of theoretical understandings, personal philosophy and experience, and practical learning (Clandinin & Connelly, 1988), to articulate their understanding of anaphylaxis and guide their actions within the protector role. Empirical knowledge gained through classroom experience, was particularly evident in preparing teachers to cope. Teachers claimed they felt better prepared and more confident when such knowledge was generated in collaboration with others. Participant Eight provided an account of such collaborative learning, stating; '*Things occur to us (the staff)… or to someone. When someone becomes aware of what might be a problem, we decide as a staff what will need to be done'*.

Participants reported that much anaphylaxis knowledge was gained via sharing information, practical advice and talking through problems and concerns with colleagues and others in the broader school community. Teaching colleagues, parents of anaphylactic students, and in some cases the regional school nurse, were all considered valuable educational resources, both for their contextual relevance and ready accessibility within the teachers' immediate work environment. Participants considered communication with the parents of anaphylactic students integral, stating *'by talking with the parents you actually get individual information that is specific for that child'* (Participant Eight), and *'if you hear stories or incidents (regarding the child) it makes it a bit more real'* (Participant Six).

The data, however, indicated that the experience of collaboration with parents and colleagues fluctuated markedly between schools, year levels, and individual participants. Participant Eleven articulated the absence of such support, stating; *'I feel like I really just have to work things out from my mistakes and it's just a crappy way of doing it'*. Likewise, the majority of participants reported scant

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contact with the regional school nurse, although as in McCarthy's (1996) chronic illness study, this was a valuable resource for some. Such factors played a significant role in teacher stress and coping.

CONCLUDING STATEMENT

Overall, it is evident that for teachers in this investigation, roles in anaphylaxis management were complex and multifaceted, a finding indicative of the general trend in teachers' work in an era of intensification. Additionally, the results establish that anxiety and stress were a common response to assuming the role of protector for anaphylactic students. Such emotions were strongly associated with the onus to both prevent and respond to a life-threatening reaction, and the perception that *'this is not what I signed up for'* (Participant One). These findings raise questions as to the level of medical responsibility imposed upon teachers as intensification continues, and to the subsequent ramifications for teacher wellbeing in terms of stress and coping.

Although small-scale, this study contributes to previous research by illustrating the importance of local factors in terms of teacher stress and coping in the role of protector. We identified such factors as being *sociocultural* in that they related to collaboration and communication with members of the immediate school community. To this end, the acquisition and application of personal practical knowledge emerged as critical in preparing teachers to manage anaphylaxis. This was in addition to the factors previously detailed in the research literature, these being formal education, clear policy, and established procedures to prevent and deal with an emergency.

Our study has served as a base-line investigation, providing foundational data and consequent findings. However the time-constraints of the investigation prevented a full-scale ethnography, and the small number of participants limits the generalisability of findings. Nevertheless the words of the teachers involved have implications for all those involved in the care and education of children with anaphylaxis. Being that anaphylaxis is a particularly under-researched area in education, directions for further research are numerous, including a large-scale investigation to apply the themes and issues identified in this study to a broader teaching/early childhood education population. Implications for practice that warrant further investigation include; current inconsistencies in formal anaphylaxis education, the lack of education for casual teachers and undergraduates, and the need to more fully utilise the Anaphylaxis guidelines in school-based management and early-childhood settings. Finally, this study highlights the importance of support and guidance for teachers with anaphylactic students from within the broader education community, particularly from colleagues and parents.

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NOTES

i Common symptoms of an allergic reaction include swelling of the face, hives, abdominal pain and/or vomiting. Loss of consciousness and symptoms of airway obstruction such as wheezing, throat tightness, and difficulty breathing, indicate an anaphylactic reaction and necessitate the prompt administration of adrenaline (Department of Education, 2006b), this being the key factor in preventing fatalities.

[ii] Students diagnosed at risk for anaphylaxis are prescribed an adrenaline autoinjector, called an EpiPen. This device administers a prescribed dose of adrenaline into the thigh muscle when pressed against the skin, and is designed for self-administration or use by non-medical personnel such as parents and teachers (Brijnath, 2006).

[iii] A chronic condition is defined as one that has lasted or is expected to last more than three months (Perrin et al., 1993).

[iv] This is an American study. Anecdotal evidence suggests most Australian government schools do not employ full-time nursing staff. In Victoria, the Government provides 75.8 full-time nurses to service 1750 state, catholic and independent primary schools (State Government of Victoria, Year Unknown).

[v] Given that this study was small, only teachers in school settings were invited to participate in the research. It was not logistically possible to involve teachers in other early childhood education settings.

[vi] For a child to be considered anaphylactic, a medical diagnosis and an EpiPen prescription was required.

[vii] Action plans differ from Individual care plans or Individual management plans. Action plans are instructions, individual to each student, that detail the steps in an emergency. Individual care plans are a comprehensive management plan signed by the parents, principal and doctor of the allergic child.

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