Preparedness for Sudden Change:
Lessons from managing large-scale disruption within a Bachelor of Nursing community

EXECUTIVE SUMMARY

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INTRODUCTION

The ongoing earthquake series in Christchurch has revealed the complex nature of the wider community that supports teaching/learning activities, and highlighted the type of challenges that may arise from such sudden disruption to a community.

Once the initial response to the disaster has been undertaken and physical safety assured, the usual 'business' of teaching and learning may be suspended, superseded, and/or reconfigured. However, the learners' needs remain, albeit reconfigured.

Little is known in New Zealand about adapting educational processes in circumstances such as this of a sudden, large scale disruption. Therefore close scrutiny of the local context and disaster response in regards to education delivery is warranted.

CONTEXT – THE LEARNING COMMUNITY

The setting for this study is the School of Nursing & Human Services[1], positioned within the Christchurch Polytechnic Institute of Technology (CPIT). The School of Nursing offers a range of programmes at degree and postgraduate level, of which the Bachelor of Nursing (BN) programme is the most subscribed.

At the time of the February 2011 earthquake, there were approximately 604 students enrolled in the Bachelor of Nursing (BN) programme, and a teaching workforce with 45 full-time and 27 part-time staff members across all years of the BN programme.

The magnitude 6.3 earthquake which occurred in Christchurch at 12.51 on February 22nd 2011 was catastrophic. Unlike the previous major earthquake in Christchurch, which occurred in September 2010, the event was in the middle of the day, and the epicentre within 5 kilometres of the CBD. The CPIT School of Nursing is located nearby, and the impact was immediate and severe. CPIT staff and students were evacuated from the campus and advised to make their way to home and family.

The CPIT city site was cordoned off by Civil Defence as part of the declaration of a state of national emergency. Following this emergency closure, the main CPIT campus (where the School of Nursing is located) remained isolated within a prohibited 'red zone' for approximately six weeks.

Staff could not collect personal belongings or any teaching and learning resources after they were evacuated, as the campus was inaccessible. Considerable damage was also sustained by the Information and Communications Technology (ICT) systems and to varying degrees other organisational infrastructure.

There followed a period of restricted access and it was four months before all programmes were again offered from the city campus. During this period the School of Nursing negotiated use of some four rooms, one office space, a lecture theatre and a computer suite from a local University, some thirty kilometres from the city centre.

There were challenges to managing both intangible and tangible resources, such as place and space, time, physical assets, roles and relationships. Change was continuous in the 'new normal'. The actions taken by the School of Nursing to restore teaching and learning in this context are the core of the study investigation.

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[1] *The School of Nursing at CPIT recently changed to the Department of Nursing in a CPIT organisational restructure. As the name change occurred after this research was undertaken, we refer to the 'School of Nursing' throughout this document for the sake of consistency and accuracy to reflect the context of the study.*

AIMS

The goals of this study were to:

- Identify and describe the impact of such a sudden, traumatic natural event on the capacity and processes required to deliver a teaching/learning programme within an unstable and changing context;

- Explore the most appropriate and optimal role(s) for education providers where there is sudden, large scale disruption to the learning community ;

- Determine the most effective ways to minimise disruption to programme delivery and student learning and;

- Provide recommendations for anticipating and actively managing change following disruption in tertiary education institutions to ensure continuity of good teaching practice.

LITERATURE – DISASTER MANAGEMENT, RECOVERY AND TERTIARY EDUCATION

The definition of 'disaster' for this project is based on the United Nations (International Strategy for Disaster Reduction). Disasters differ from other organisational crises or problems; most cannot be managed by merely mobilising more people or resources. The theory of disaster management enables us to make some sense of chaotic and complex event(s), by giving a better understanding of a current or past disaster in order to prepare for future event(s).

The traditional disaster management model consists of two phases: the first is pre-disaster risk reduction, and the second is the post-disaster recovery phase. The first phase includes prevention, mitigation and preparedness, while the second includes activities of response, recovery and rehabilitation. These phases can occur as a continuous process in which 'activities run parallel to each other, with varying degrees of emphasis'. (Ashgar et al, 2008).

Long-term recovery from disaster is a daunting challenge for any affected community. Olshansky and Chang (2009) note that planning and management of post-disaster recovery is emerging as an important new area of research, where previously the focus had been on mitigation. Recovery is increasingly viewed as a 'dynamic and complex' process, which Olshansky and Chang (2009) contend not only provides an opportunity to improve conditions, but also to mitigate the impact of future disasters.

There is very little research and/or literature which specifically addresses disaster preparedness for tertiary educational institutions. Although a significant body of literature exists regarding the impact of, and planning for disasters in general, there are very few studies which concern the relationship to teaching and learning in a tertiary setting. An extensive review found that the few such pieces of research which existed were mostly international, in response to Hurricanes Katrina and Rita (USA) and floods and fires in Australia.

METHODOLOGY AND METHOD - DESIGN

This project used a descriptive/exploratory case study design, focusing on the three phases of response, recovery, and rehabilitation, over a period of 18 months. This approach was taken to ensure timely collection of data at relevant stages of the post-disaster recovery process. A case study design permitted the research team to combine varying data collection methods such as interviews and the critical review of documents or electronic sources, whilst also allowing for the inclusion of relevant quantitative data from a survey. The case study comprised of three stages:

1. Interviews
2. Survey
3. Artefact analysis

ETHICS

Strategies for reducing the risk of harms included:

- Ensuring sound design of the study: This was a 'no-blame' project which examined process, it was not intended that individuals or their actions during the crisis were investigated in any way.
- Giving particular consideration to participant welfare
- All participants in both the interview and survey phases of the study were offered support throughout data collection.
- Mitigating confidentiality concerns by protecting participants' identities in a number of ways.
- The survey phase was anonymous and consent was implied by return of the questionnaire to preserve anonymity.

SAMPLING FRAMEWORK

RESPONSE STAGE	RECOVERY STAGE	REHABILITATION STAGE
Staff		
-Management -Corporate services staff -Operations staff -Academic staff in the School -Management staff from School, Faculty & the larger organisation	As for the Response stage	As for the Response stage
Electronic/Documents		
-Organisational website -Organisation/School Facebook sites -Official communication (CPIT website, Faculty & School emails) -Organisational /faculty/school/disaster or emergency plan/s and any other relevant instructions	As for Response stage with the addition of -Learning management system (Moodle) websites. -Timetables -Programme administration materials	As for the Response and Recovery stages

Phase 1: Interviews

Selected participants from the School of Nursing with key decision-making and/or operational roles related to the BN programme and BN learning community, and staff in the wider organisation whose roles in the disaster response impacted on the BN learning community were invited to participate in individual interviews.   All agreed to participate.

DATA COLLECTION

Data collection in this phase was undertaken through semi-structured, audiotaped, face-to-face interviews. An iterative inductive analysis process was used to uncover themes from the data (Patton, 2002).

INTERVIEW FINDINGS - THEMES

The data yielded a number of themes which arose from the descriptive narrative of participants. These have been described by the researchers as:

1. Action Plans
2. Context
3. Leadership and Followership
4. Balancing shifting priorities (Professional responsibilities and personal imperatives)
5. Communication
6. Making decisions/taking action
7. Preparedness and thinking ahead

THE INTERCONNECTED NATURE OF THE THEMES

Action Plans are located outside the circle of the other themes due to the formal and pre-planned nature of these. However, these plans provide the foundation upon which the other facets of the model sit. Written before a disaster to provide guidance during the emergency (for example: the Crisis Information Management System (CIMS), these plans are of a more static nature, that while imperative in the rescue and response phases of a disaster, are superseded, over time, by dynamic decision-making and taking action.

The *Context* in this model surrounds, and is a major influence on, all the other themes. The nature of the context in the Canterbury earthquakes was overwhelmingly one of disruption and ongoing uncertainty.

Communication occupies a central place in the model, having a fundamental and vital influence on *Leadership and Followership*, and the process of *Making Decisions* that is foundational to *Taking Action*. *Balancing Shifting Priorities* is shown as a pivot point in this model, demonstrating the competing demands on educators of *Personal Imperatives* and *Professional Responsibilities* and how the priority at any given time may be 'see sawing' and overlaying capacity for leadership and followership or making decisions.

Interconnected themes emerging from the research
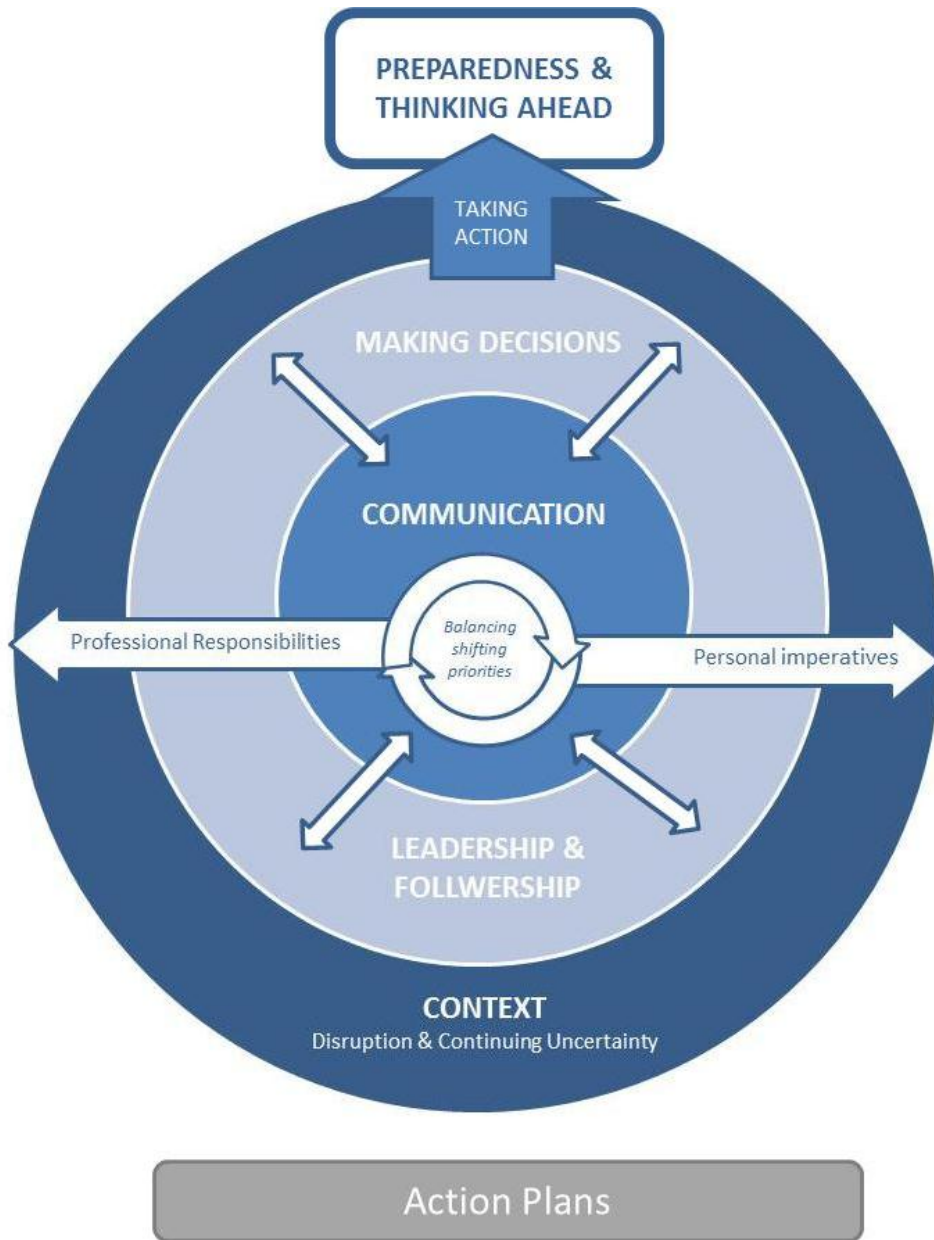
CONTEXT: CYCLES OF DISRUPTION & CONTINUING UNCERTAINTY

The size, scope and continued nature of the disaster-created context made a difference. The context was always uncertain and remained so - it was not until any earthquake had occurred that individuals could determine exactly how big an event it was or how serious the consequences were going to be. A persistent and enduring question was - what were we to expect – is this getting better or worse? As time passed, there was less variability in terms of changes to context.

With earthquakes there was a constant sense of uncertainty about what will happen and when. The threat is constant - one earthquake always precipitates another. Just when this will happen is less certain.

ACTION PLANS AND TAKING ACTION

Most participants, with responsibility at an organisational level, voiced a feeling that the emergency actions taken were adequate in a global sense. For each earthquake event the initial evacuation was controlled and safety a first priority for first twenty four hours.

What was less well anticipated and perhaps less well managed was the response of students and staff. Very few were aware of a disaster plan. This group seemed largely unaware of the corporate level emergency management strategy, beyond the printed instructions displayed on walls. Participants from this group spoke of not really knowing how to respond, where to go or what to do.

What also arose from the interviews was a questioning of the notion of a plan as an organising principle in disaster responsiveness. This came through as statements made by participants, such as; there was a lack of a plan in common; were we all talking about different plans, were there too many plans?

COMMUNICATION

Communication was seen as critical. People wanted, especially close to the event, clear and consistent information to inform their response and actions. The immediate needs during and after each earthquake were unfailingly engaged with physical safety, evacuation to safe areas and information that ensured continued safety and security – key facts such as when to leave the building, where was safe, how to remain in a safe environment - needed to get to the right people at the right time.

Across time was it communication about 'what was going on' and 'the direction to take' and 'where to get' what was needed. This was a constant requirement in the short, medium and long term. This was described as a need for clarity, consistency and inclusiveness.

BALANCING PERSONAL IMPERATIVES AND PROFESSIONAL RESPONSIBILITY

This theme can be characterised by prioritising. A personal or self-focus was described in the first instance in terms of attention to personal safety – for self; for others immediately around, regardless of whom; for family and then much later participants became aware of a sense of professional responsibility.

Later, participants described the need for an acknowledgement of any on-going problems and issues, specifically around personal circumstances. Initially this related to essentials, damaged or lost homes,

lack of basic services, travelling around the damaged city and tiredness and distress. In the longer term this changed and became related to such issues as house repairs, the need to consult with insurers, etc., which were invariably within working hours. Participants described this as a need to 'go in and out'.

Participants within the School of Nursing described the role of the nursing professional - trained to cope in and are familiar with a crisis . Many described drawing from the skillset previously acquired as a nurse as an advantage during the earthquake events.

LEADERSHIP-FOLLOWERSHIP AND MAKING DECISIONS

Safety is paramount and it was perceived that leadership is critical in ensuring this. However, in this construct, there was again an evident layering. There was some questioning about how well this was achieved, in terms of 'who does what and what is to be done' - this was seen in divisions of what is done at executive level and what could be done at school level?

This may have been because there seemed to be two separate channels of decision-making evident. Firstly on an internal level within CPIT and thence within Schools, such as the School of Nursing and Human Services. Much of this was functional and related to support with a purpose. The other was external supporters (those away from and remote to the disaster). They were seen as providing very important resources for CPIT, either in terms of material means or human resource.

PREPAREDNESS AND THINKING AHEAD

We were not prepared for the February event – but is it possible to ever be prepared for something like that? We became better prepared after each major event. Each experience informed the next and knowledge about what to do became embedded, rather than requiring external direction or support.

In regard to teaching and learning, preparedness is a state of mind – not a rigid plan at teaching level – unlike Faculty Management level - where it is dangerous and dirty and needs rigidity. Participants described the need for a phased recovery and future proofing. People need to feel safe and secure on some level at least and need a sense of certainty about what the response will be if/when another earthquake occurs.

Phase II: Survey

Selected academic staff from the CPIT School of Nursing were surveyed in order to elicit a broader, 'school wide' perspective of events in each stage of the disaster. There were 45 full time staff employed in the School, of whom 25 were eligible to take part in the survey. The survey was constructed in Zoomerang. In total, 17 respondents participated in the survey (65.3% response rate).

SURVEY THEMES

ACTION PLANS

Respondents were asked to indicate their awareness of disaster plans. The majority of respondents indicated they were not aware of any plans for the organisation or the School of Nursing. When asked if they became aware of a specific School of Nursing disaster plan, after September 2010 but before the February 2011 earthquake, the majority of staff still indicated 'no', while slightly more staff said 'yes'. Responses in relation to how people found out about this plan ranged from specific and focused channels such as *Health and Safety briefing, school meetings, or email,* to less particular mechanisms such as *it was widely discussed*, highlighting the importance of informal mechanisms of information dissemination.

COMMUNICATION

When respondents were asked whether communication channels were clear and direct immediately after the February earthquake, participants characterised the situation as 'chaotic'. Some staff indicated they perceived confusion and delays in communication in the immediate post-earthquake period.   A vital part of communications during the disaster related to how decisions were communicated to the learning community.   Responses reinforced the importance of communication from a level of management that staff are used to communicating directly with, in this instance the Head of School and Dean of the Faculty.

BALANCING PROFESSIONAL RESPONSIBILITIES & PERSONAL IMPERATIVES: SHIFTING PRIORITIES

While a number of respondents were clearly concerned for family and named them as their highest priority, it is evident in their comments that their sense of urgency about finding family was occurring contemporaneously with them attending to the safety of colleagues and students; showing how priorities shifted according to need as the disaster unfolded.

LEADERSHIP AND FOLLOWERSHIP

Leadership after the February 22nd 2011 earthquake was, as has been discussed in the interview section, complex and multilayered. Some comments identified those in explicit leadership positions in the School, and reinforced the importance of leadership and communication at this level of the organisation, while others noted where leadership emerged, not necessarily from an identified leadership position. For some people, things seemed just to happen and it was not clear where the source of that leadership was.

MAKING DECISIONS

Decisions about resuming teaching were understood to be made at a senior management team level and communicated via the school management (Dean and Head of School). Most respondents identified the move to shared premises with Lincoln University as the key decision made about teaching and learning.

Once that decision had been made by the senior management, decision making then devolved to a School level, and staff had a greater perception of the School's, and their own, involvement in decision making that was essential to resuming teaching and learning. This occurred through various individuals and groups that worked together to plan the educational delivery. Organising support for academic staff to resume teaching in the new context, for example orientation, was also part of the decision making.

TAKING ACTION

In the immediate period following the earthquake personal and family safety and welfare concerns were necessarily of higher priority than professional ones in an educational context (where the work is non-essential to the preservation of life and wellbeing, unlike, for example, in the health care setting where this distinction is not so easily made). Strategies listed by respondents reflected this, and show a change over time as the situation became less urgent.

The fact that this study was undertaken in a School of Nursing, however, did mean that there was concern for, and a relationship with, the School of Nursing's industry partners in the health care sector. A number of staff and students worked with the local District Health Board (DHB) to assist and found this a helpful strategy.

Unhelpful responses or strategies identified included comments relating to safety issues, and loss of information and communication channels. Barriers specifically related to getting the teaching and learning systems up and running following the February earthquake included personal and professional circumstances. On a positive note, respondents reported the teamwork and individual attitudes among both staff and students that enabled barriers to be overcome.

PREPAREDNESS AND THINKING AHEAD

Prior to the February 2011 earthquake, only a few had taken specific steps to prepare for another sudden event, such as an earthquake. Several respondents noted that they attended to preparedness on a personal level, particularly around their capacity to maintain communication. Others developed survival kits and plans at home, and focused on safety in the event of another disaster. Several respondents noted some changes in their preparedness in the educational setting. These were in relation to promoting the safety of students, and communications strategies. In one instance the respondent noted an increased attention to learning design for these different circumstances.

Respondents were asked about what strategies they would consider using in another sudden event. As previously, immediate safety and family were key priorities for future strategies. Others included strategies related to communication – both to families and in relation to professional responsibilities; this included ensuring they had the means to communicate available. The other major area of preparedness mentioned related to teaching materials and the capacity to meet student learning needs in a flexible way.

Phase III – Artefacts

ARTEFACTS PURPOSE

The gathering of evidence from the electronic and documentary artefacts is of a corroborative nature to assist in the exploration of the preceding two phases. Examining these outputs of decision making, planning, and action increased the rigour of the findings. Data was obtained from the CPIT administrative and ICT systems, collected in electronic or hard copy form as appropriate. Content analysis was undertaken as befitted the data collected.

ARTEFACTS FINDINGS

Key themes that emerged from analysis of the interviews and the survey are interwoven throughout many of the artefacts, which include emails, memos', web postings, media releases, procedure and management manuals, policies and plans. The critical focus of these was on connecting and engaging with staff and students, and communicating key messages at critical times.

TEXTING BETWEEN MOBILE PHONES

Unpredictable cell phone access was problematic during the first days following each event. Once staff had reliable and consistent access to cell phones and cell phone communication systems were stabilised texting was used to provide key messages, and became a source of collegial support, assistance and information.

THE STUDENT FACEBOOK SITE

A Department of Nursing Facebook site was established on the 28th of February 2011. This met two goals it provided a crucial means of communicating with students in the community, and it also informed staff of the most pressing student concerns and issues.

ELECTRONIC MAIL (EMAILS)

Emails began emerging from CPIT on the 24th of February, with initial messages of concern, sympathy and reassurance. One month after the earthquake, a sense of moving forward, planning and decision making were appearing in emails. A sense of preparedness and thinking ahead was apparent in emails as the recovery phase began. Attention in the period from 28 March onwards, (the recovery stage), was on reconfiguring programme delivery and regaining 'normality'; however this was a 'new normal'. Emails sent throughout April continued to paint a picture of educational restoration.

Recommendations

This study has provided an exploration and analysis of the CPIT Bachelor of Nursing learning community following a disaster.   Unlike other studies of educational provision in and following a disaster, which have been focused on the response phase of that disaster, this study looks at an earthquake sequence which occurred over a nearly two year period, moving successively through multiple cycles of continued instability and disarray.

However, whilst we provide recommendations which have emerged from this experience, these must be qualified as they relate directly to this particular context, this specific disaster related locale, and these people's response.

What is perhaps most important to take from our experience is that a plan does not, by itself, equal preparedness; every institution must look to its own context, consider its own priorities, and design methods of preparedness which will work for them.

Many of the recommendations made relate more to ensuring that the context in which teaching and learning occur, which must necessarily be safe, secure and sheltered, in both a physical and emotional sense.

AIM 1: RECOGNISE AND **IDENTIFY THE IMPACT** A SUDDEN TRAUMATIC NATURAL EVENT WILL HAVE ON THE **CAPACITY AND PROCESSES** REQUIRED TO **DELIVER A TEACHING/LEARNING** PROGRAM WITHIN AN UNSTABLE AND CHANGING CONTEXT

1. Encourage p**ersonal risk mitigation**
2. **Offer continued support and flexibility to all staff** and students
3. **Continue looking back** - Reflecting on **and learning from each event**
4. Ongoing discussions about readiness and the continuing of **regular drills and practice**

AIM 2: FACILITATE AND SUPPORT THE DEVELOPMENT OF THE MOST APPROPRIATE ROLES FOR STAFF WHICH OPTIMISE THE CONSEQUENCES ASSOCIATED WITH DISASTER

Safety is always the first priority - Ensuring safety can only be achieved through a pre-planned, considered and well-co-ordinated effort. Staff cannot react appropriately if they do not know what to do. It is useful for all staff to be aware of their role in a disaster – and to know how to get themselves, students and colleagues to safety.

 Helpful strategies

1. **First aid equipment** should also **be kept outside the building**
2. **Consider and** communicate **the role of 'floor warden'**
3. Systems for knowing the whereabouts of colleagues, students and relevant other
4. **Ensure there are easily accessible** instruments for **immediate mass communication**
5. Guarantee **there is** a **well-known post-evacuation strategy**

AIM 3: DISCOVER THE MOST EFFECTIVE WAYS TO MINIMISE CONTINUED DISRUPTION TO THE LEARNING COMMUNITY

1. Plans are not preparedness, but are part of it

2. Initiate and maintain consistent communication

3. **Make decisions** relating to resumption of program delivery **as soon as possible** and ensure all staff know about this

4. Consider teaching delivery alternatives

There is, unfortunately, no prescription, nor template, which can be dictated and adapted to form the basis of preparedness. Immediate site securement and ensuring staff safety through a well planned and executed evacuation is the most vital activity. The provision and delivery of education is a second level activity in the immediate aftermath of a disaster. The main role of an institution in this case will be to communicate with and support staff and students.

However, the preparation for the resumption of teaching and learning when community members are safe and secure is of obvious importance. The timely resumption of education will mean that both staff and students will be able to resume some degree of life 'as normal', which has been proven to have positive impacts in the aftermath of a disaster.

The Research Team would like to acknowledge and thank the many CPIT staff who gave their time to participate in this study.

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