

Perioperative Interprofessional Dedicated Education Unit Pilot

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1 Background:

Manukau Institute of Technology (MIT) and Counties Manukau Health (CM Health), through their Collaborative Nursing Development Unit (CNDU), piloted the Dedicated Education Unit (DEU) concept at Middlemore Hospital in 2009. At the time, Ako Aotearoa, National Project Fund, supported the research and the money was used to evaluate the development and establishment of the DEU pilot sites.

The current initiative was an extension of the DEU concept into the area of interprofessional education involving three organisations, Counties Manukau Health, Manukau Institute of Technology and the University of Auckland (UoA). This project is focused on the recommendation from the original research for the inclusion of other health professional undergraduate students into the DEU model (Fourie & McClelland, 2011). The initial pilot project in 2009 demonstrated both the ability of the DEU model to support undergraduate nursing students with their learning as well as the suitability of the DEU as an ongoing undergraduate clinical education model. As a result of this initial study, DEUs have been established across most services in CM Health, where the concept has proved to be successful through providing a supportive environment to grow undergraduate nursing students into registered nurses for the future workforce. The need for improved teamwork and collaboration amongst healthcare professionals has placed the educational preparation of healthcare students under the spotlight. Interprofessional learning for students has benefits that include facilitating more effective communication with those from other disciplines as well as developing a better understanding of teamwork, professional roles and the roles of others (Ponzer et al., 2004).

Current efforts to improve education through an interprofessional approach may focus on enabling undergraduate students from a variety of professions to learn together with the intent that this will assist them to work together collaboratively in the future (Thistlewaite & Moran, 2010). In some undergraduate education, this has taken the form of students from a number of different health programmes undertaking courses that are considered core to a variety of health professions, together. The objectives for this study, however, were to build on the DEU experience to provide a clinical learning environment where students from the health professions of nursing and medicine, had opportunities to learn together with staff in a DEU in the perioperative setting. The literature suggests that while there is a variety of ways interprofessional education occurs using mechanisms such as seminars, workshops or simulation, authentic clinical settings provide the optimal learning experience (Lapkin, Levett-Jones & Gilligan, 2012). Using the DEU concept as a proven clinical education model in which to encourage

collaborative, interprofessional learning, seemed to be an ideal opportunity to establish and examine interprofessional learning through a research study.

2 Literature Review

The World Health Organisation (WHO, 2010), recognises there is an increasing shortage of health workers globally and that health systems are fragmented and struggling to meet Health need. This has led to the development of the WHO Organisational Framework for Action on Interprofessional Education & Collaborative Practice (Gilbert, Yan & Hoffman, 2010; Thistlethwaithe, 2015). Collaborative practice and understanding the roles and responsibilities of other healthcare professions are important for health services to manage the current complexity of healthcare and therefore it is imperative that the way in which healthcare workers are educated is discussed and reframed in order to facilitate health care professionals having the competencies needed to work in the new context (Thistlethwaithe, 2015). Interprofessional education (IPE) and collaborative practice are acknowledged as key to improving patient care, safety outcomes, and can be central to mitigating the many challenges faced by health systems around the world (Bressler & Persico, 2016; Gilbert, Yan & Hoffamn, 2010; Sargeant, Loney & Murphy, 2008). Interprofessional education should contribute to the ability of healthcare professionals to develop collaborative practice.

The complex health issues of today's patients require more than one health care discipline to address their multifaceted health issues. Therefore, interprofessional collaboration is best suited to address these complex and challenging patient needs (Bridges et al., 2011; Green & Johnson, 2015; Bressler & Persico, 2016). There is increasing evidence that interprofessional practice which is collaborative in nature, has a positive impact on patient outcomes (Suter et al. 2012). The concern for patient safety can be seen as a major driver for the strengthening of interprofessional collaboration in healthcare education programmes (Aase, Aase & Dieckman, 2013). Interprofessional education is necessary to prepare a collaborative, practice-ready health workforce equipped to respond to the complexity of local Health needs - an important step to transform healthcare from fragmentation to a position of strength (WHO, 2010; Gilbert, Yan & Hoffman, 2010).

WHO (2010) has developed a model which outlines the essential elements required for collaborative healthcare where health and education systems exist to meet the needs of the local population. Future health workers need to be trained to work together to become a 'collaborative practice-ready workforce' that will 'provide collaborative healthcare to local

populations with the goal of delivering improved health outcomes (WHO, 2010; Green & Johnson, 2015).

Interprofessional education (IPE) is a process in which students from two or more health and social care professions learn with, from and about each other to enable effective collaboration leading to improved clinical outcomes for health consumers (WHO, 2010; Mellor, Cottrell & Moran, 2013).

For health professionals to collaborate in practice, they will require interprofessional socialisation as undergraduates (O'Brien, McCallin & Basset, 2013). IPE offers students an opportunity to widen their professional view by giving them insight into the roles and responsibilities of other professions and challenges them to explore the benefits of collaboration, which results in coordinated, directed patient centred care (Grapczynski, Schuurman, Booth, Bambini & Beel-Bates, 2015).

IPE programmes aim to enhance clinical outcomes by improving collaboration between health professionals. IPE requires co-operative training across healthcare professionals to equip learners with collaborative skills required for today's complex healthcare environment (Abu-rish et al., 2012). Evidence suggests that interprofessional learning in the work environment contributes to improving services and effecting change (Barr, 2014). Patient safety education delivered interprofessionally increases healthcare students' awareness of the importance of effective team-working for safe patient outcomes (Anderson et al., 2009). The future healthcare workforce requires education and training in settings that model efficient, reliable, collaborative practice that leads to the best patient outcomes (Thibault, 2013).

3 Research Design

The three objectives of the interprofessional DEU project were to support interprofessional learning for students (nursing and medicine) in the perioperative setting; to support interprofessional learning and collaborative practice through shared learning opportunities for students and staff in the DEU and the socialisation of students from different disciplines; and to explore the potential to include students from other disciplines in this setting, such as anaesthetic technicians into an interprofessional perioperative DEU (IPDEU) in the future.

While the potential opportunities for shared learning for students from nursing and medicine are diverse such as in a shared orientation, peer teaching or simulated case studies, ultimately the constraints of organisational issues saw three main shared learning

opportunities established. There was a combined experiential tutorial facilitating collaborative learning with medical and nursing students where students attended a tutorial given by a general consultant on perioperative care where the focus of the tutorial was a patient assessment in relation to patient preparation for surgery and postoperative management.

The second shared learning opportunity that was established was a simulation which involved the medical students attending a scrub session with the CLN where they were given the opportunity to learn to scrub and gown in a relaxed atmosphere. The third shared learning opportunity was the interprofessional simulation session where both nursing and medical students participated. During this session, the students first worked together in groups to discuss the different roles in the perioperative team and the importance of communication in the provision of patient care. They were then able to carry out a preoperative assessment followed by positioning a “patient” for surgery, setting up an instrument trolley and draping a patient. During the simulation, students discussed essential surgical safety checks and the importance of ‘counts’. Participation in this simulation enhanced the students’ familiarisation with intraoperative processes with the aim of enabling them to be more confident in taking an active role in theatre.

4 Methodology

A mixed method design was utilised, and data was collected through surveys and focus groups interviews from July 2015 through to June 2016. Initially, electronic surveys were emailed out to participating students. However the response rate was poor, so from February to June 2016 hardcopy survey forms were given to students at the beginning of the focus group interviews for completion. This resulted in a much-improved response rate for the surveys with a total of 42 responses to this survey over Semester One 2016, with 21 medical students, 16 nursing students and three Registered Nurses from Perioperative Care. Two respondents did not indicate who they were.

Data was collected from medical and nursing students in the perioperative setting using focus groups interviews and surveys. Medical students were 4th year students from the University of Auckland medical programme (approximately 10 in 3 rotations in each semester), and nursing students were from either year 2 (approximately six each semester) or third year of the Bachelor of Nursing or Bachelor of Nursing Pacific degree programme at Manukau Institute of Technology.

The same data collection methods were used with the IPDEU operational project group and the perioperative staff team directly involved with DEU activities including the Clinical Liaison Nurse (CLN) Academic Liaison Nurse (ALN) and clinical teaching staff (who numbered approximately 20). The operational group has approximately ten members and includes the two CLN's for the perioperative DEU (one based at Middlemore Hospital and one based at the Manukau Surgery Centre) and the ALN (a lecturer from the Faculty of Nursing and Health Studies at MIT).

The focus groups were largely facilitated by members of the research team external to the IPDEU operational project group and the perioperative staff involved with DEU activities as planned. However, two members of the operational group were involved in focus group facilitation under guidance from another research team member to develop their research skills in group facilitation and later involved in the qualitative analysis for the same purpose.

All focus group and individual interviews were audiotaped and transcribed, and thematic analysis was undertaken. One of the research team members undertook a qualitative analysis of transcripts, and the findings were compared with qualitative analysis undertaken by a second researcher supported by the two research team members who were involved to develop their skills in the process. Four similar themes were identified separately, and then further discussion resulted in the naming of the four overall themes found in the analysis. The subsequent analysis of the survey data also supported the four themes.

Participants were invited to participate and were free to choose whether to attend the focus group interviews or complete the surveys. Information sheets were developed and made available, and consent forms were completed by those participating prior to the focus group interview commencing. The confidentiality of participants and their observations was preserved by restricting access to the raw data and removing all reference to individuals by name in the reports and presentations.

No sensitive information was collected, and it is planned that participants will have access to the final report before any publication to ensure that no identifying information has been included. No physical, psychological or social discomfort was anticipated for participants, and none has been reported. There has been no referral of any participants to health and counselling or EAP services by research team members.

The project was an opportunity to match the education of students more closely to the reality of the workplace and therefore enhance the ability of the tertiary organisations involved to produce more work-ready graduates. It provided an opportunity for service delivery and tertiary education to collaborate in the provision of qualified work-ready doctors

and nurses, and it provided a platform for furthering the development of relationships between the three organisations involved.

A number of outputs from this project are planned, and prior to the research being undertaken, the pilot IPDEU ran in the perioperative setting from February to June 2015. Several presentations based on the evaluation of the pilot have been undertaken to date, and any reports will be available to other tertiary education providers with interest in interprofessional education. Previously the DEU project has generated interest from other tertiary providers, and interested parties would again be welcome to visit the IPDEU unit and discuss the project.

5 Findings

The four major themes identified in the qualitative analysis were working in a team, learning together, feeling supported and recognising challenges.

The Benefits

5.1 Working in a team

Working in a team had a number of components for participants. As well as being in a team, participants described appreciating the roles of others as well as the support they gained from the team.

Just making sure that we are optimising teamwork and communication between specialties. Also understanding more about other people's roles I guess is a big one.

Participants described the interprofessional perioperative DEU as providing an environment where everyone worked together 'for you and with you' and for common goals. *"I feel everyone around us wants us to do well and learn more and experience more so I think that's good."* Such a supportive team and work environment were seen as developing both confidence and competence in students as well as the ability to effectively communicate with others in an interprofessional team.

I really like the idea of improving communication with the other specialties by communicating with the other specialties. I know last time at the start we just sat down and had a chat about what year we were, kind of what we were doing and what we wanted to do. That was nice. By the end of it we knew each other's names. That's the thing...you meet the people that you might be potentially working with.

5.2 Learning together

Sharing interprofessional sessions which provided learning opportunities such as simulation also contributed to a sense of work readiness in the students and their teachers by contributing again to confidence and competence. The opportunity for shared learning was seen to facilitate an understanding of the roles of other health professionals. One focus group participant summed it up in an example saying,

The other thing that I have seen that I think these sessions does that's really magic for their future is the different disciplines gaining an understanding of not just the role of the other disciplines but the way the roles interact, and that if I do this it's going to impact on you like this. Or if you don't do that then that will impact on me like this.

Additionally, students reported that developing relationships with other students and staff from other health professions, increased their respect and appreciation for the work they did and the roles they had in the perioperative environment.

Actually we had a really good experience with a nursing student who came to our theatre for the whole day. Our consultant surgeon made her feel really welcome. He was calling her in at the same time as the both of us to teach her things, I think she enjoyed that. So I think that is the other side of it, she got a lot of teaching not only from the nursing staff but from the medical staff. And we also get a lot of input from the senior nursing staff. They really help us out a lot. We have had really good experience with that actually.

Teaching moments were not restricted to the perioperative environment, however, with a staff member describing an opportunity outside the setting where learning was able to be facilitated by taking the teaching moment that presented. An opportunity arose during the project for nursing students to be involved in the OSCE's undertaken by the medical students. While this wasn't a planned shared learning experience, the involvement of the students from both groups was acknowledged in the focus groups as a positive learning experience.

5.3 Feeling supported

Participants identified that feeling supported again enable them to develop confidence and competence which they felt led to improved care for clients. They described the DEU and the support they received as providing motivation for them to want to participate, grow their skills and do well. *"I think being in a DEU challenges your thinking more."* In the interprofessional environment, they experienced a sense of bonding with the students from other disciplines in

an informal setting such as being able to acknowledge a fellow student in the corridor as well as in more structured purposeful settings such as in the theatre.

So I think the main benefits I got from it was getting to know what other people did and also getting to meet some people that I can now have a chat to. One of the anaesthetic techs and nursing students that I met, I've seen and had a chat to since.

5.4 Recognising challenges

In this theme, it was identified that 'it doesn't always work'. Finding the balance between clinical time and the provision of learning and teaching sessions was a challenge with the very different schedules that medical and nursing students have as they rotate through the perioperative area. *"And I think just following on from that, that is one of our biggest challenges trying to get everybody together at the right time."* Students differed in the extent of their previous experience so for some the simulation sessions were less useful to them personally at the time they were available although participants felt more able to offer support to other students in the session from the benefits of their own experience.

The last one was fun, I was playing the patient, so I was just lying on the bed with lots of people standing around me, but it would probably be more helpful to be playing the roles that we are going to be. But it's also very valuable to know what all the nursing roles are, and for all the nurses to know what all the medical roles are. It would be better learning how to be the role we are going to be in.

The timing of the education sessions was problematic in terms of the CLN being able to consistently involve all students at a point in their perioperative experience that was optimal for them as individuals. Nevertheless, students consistently identified benefits from the simulation sessions.

The provision of information and the promotion of the DEU concept was sometimes problematic with students starting at very different times which sometimes precluded a shared orientation where this sharing of information could have been undertaken. Some processes work well in an area and don't in another area so individualized approaches might need to be considered for optimal delivery of information around the DEU concept and the operationalizing of the IPDEU with the involvement of more students in the future across a greater number of health professions. The operational issues, however, were seen as a process, and while participants felt improvements could be made, they were also pragmatic about the constraints that existed and accepted that these needed to be worked around.

6 Analysis of the surveys

The analysis of the surveys identified that generally the perioperative IPDEU experience was regarded as positive and supported students in some areas such as discussing their role, understanding the roles of others, feeling comfortable as a part of the interprofessional team, expressing their opinions and improving their teamwork skills. As well as being consistent with the findings from the qualitative analysis of the focus group interviews, the survey findings are consistent with the benefits identified from the literature for interprofessional education. The DEU's collaborative approach was seen as a positive learning experience for both medical and nursing students. Interprofessional collaborative learning would very likely to help reduce the barriers between health professionals that may typically exist related to well-developed stereotypes associated with various health professions.

The survey asked respondents what made the perioperative team effective. Students described seeing open communication in the perioperative setting and agreed that the preoperative team encourages equal respect for all professionals in the team. In the analysis of the focus group interviews, respect was also seen to be a feature of learning together when staff and students were involved in a DEU setting as there were common goals of supporting the development of knowledge and skills in each other. The perioperative team was seen as an effective one characterised by awareness of roles and expectations, the environment, communication, teamwork, collaboration and respect. One respondent commented that there was *"Effective and transparent communication, teamwork and collaboration"*.

Respondents were asked how confident they felt in discussing their role with peers in the perioperative team. The experience appears to have contributed to confidence in students understanding their role which is congruent with the comments from focus group participants. While there was a range of responses, the majority of respondents (89.74%) indicated they felt extremely confident (20.51%), very confident (38.46%) and moderately confident (30.77%) discussing their roles with peers within the perioperative team. A total of four (4) responders (10.26%) indicated they felt slightly confident discussing their role with peers with no respondents selecting "not at all confident."

Respondents were asked how well they understood the roles of other team members as a result of the perioperative IPDEU experience. Only one out of forty respondents disagreed with this statement with the majority agreeing with the statement and a significant percentage (32.5%) strongly agreeing with the statement. As well as contributing to the understanding of the roles of team members, respondents indicated that the IPDEU

experience had contributed to their degree of comfort working in an interprofessional team. The majority of respondents (73.17%) felt extremely comfortable (26.83%) or very comfortable (46.34%) working in an interprofessional team as a result of the perioperative IPDEU. A total of (26.83%) indicated they felt moderately comfortable (17.01%) or slightly comfortable (9.76%) working in an interprofessional team and no respondent felt not at all comfortable working in the interprofessional team.

The majority of survey respondents felt that as a result of the perioperative IPDEU, they were able to express their own opinion in interprofessional team discussions and only one respondent did not feel confident in expressing his/her opinion. The majority felt very confident (31.71%) or moderately confident (41.46%) with only 17.07% slightly confident about expressing their opinion. There were three respondents (7.32%) who felt extremely confident in expressing their views in the interprofessional team.

Respondents were asked to rate their experience of improved ??? as a result of collaborative learning with other healthcare students in a perioperative IPDEU as a positive experience. The majority of respondents (50%) felt interprofessional collaborative learning would be an extremely positive learning experience for all healthcare students. The remaining 50% of responders felt that interprofessional collaborative learning would be a very positive (33.33%) or moderately positive (16.67%) learning experience for all healthcare students.

There was some diversity in responses to the statement that education with other healthcare students is likely to help overcome stereotypes that may be held by different professions with 61.54% of respondents agreeing and 33.33% of respondents strongly agreeing that the combined orientation contributed to their learning. However, two responders indicated that they disagreed or strongly disagreed with this statement.

This section of the survey attracted a significant number of comments. Students confirmed that learning about each other's roles was helpful as was the scrub session which was also seen as essential to the placement. More time, exposure and planned interprofessional experiences were advocated as for many students there were limited experiences for interprofessional learning because of student schedules. Social gains included developing rapport and familiarity with students from other disciplines. One respondent commented,

I really enjoyed the DEU session with nursing students because it set a good foundation for professional relationships even before we all graduate and become nurses and doctors.

Another respondent while agreeing on the scrub session was useful, noted that there were issues with other planned interprofessional learning.

Agree – the scrub session was very helpful.... Disagree – all other activities ticked above were not carried out with nursing students, so the only interprofessional learning that we were allocated with was the scrub session which was not enough time and exposure with interprofessional to have any significance with interprofessional learning.

In the focus group analysis, it was noted by participants that a shared orientation session would have been useful and this was supported in the surveys with comments such as

We did not have a combined orientation, but I think it would have contributed to my interprofessional learning if we did” and “Because the theatre has such a wide range of MDT understanding all roles is CRUCIAL, the combined orientation has also allowed for the development of a friendly face around (on a social level) theatre as both student groups were new to the environment.

The simulation scenario was generally seen to contribute to the interprofessional learning and overall experience. Again this question attracted a significant number of comments with the majority (61.29%) agreeing that the simulation scenario contributed to students’ interprofessional learning and overall experience and 32.26% strongly agreeing. Two respondents disagreed that the simulation scenario contributed to their interprofessional learning.

Respondents to the survey were asked how the learning opportunity for peer collaboration contributed to their knowledge and overall experience. The 35 responses to this question were able to be grouped into four categories: The opportunity to connect with each other – social/familiar; Knowledge – opportunity to learn and share; It provided a safe place/environment; It was highlighted opportunities were limited and more opportunities were wanted. The following comments illustrate these four categories:

I appreciate the different perspective. As a medical student, you are encouraged to think a certain way, and I think it’s important to understand that other professions have other ways of thinking that can positively influence future practice.

Safe space to ask questions and understand what may be expected of ways we can help/be useful.

“Having a relationship with nursing students (however minor) made it less intimidating around the wards. I felt comfortable asking any of them for help if I needed.”

Collaborated practically the roles rather than theoretically. Able to gain an understanding of the crucial role ‘team work’ plays in the theatre environment.

It contributes to my learning and experience in a way that we collaborate and share our knowledge which was a fantastic experience.

Respondents were asked about how the CLN contributed to their learning and overall experience. The four categories that emerged from the responses were: personal attributes – approachable/encouraging/knowledgeable/reassuring; provided a safe learning environment and positive learning experience; the CLN role is important/invaluable/useful/helpful; the CLN was available to students. The following comments illustrate these four categories.

The CLN was very good. She made the sessions very open and interactive. There was a safe learning environment which was great as sometime theatre can be a serious/scary place to learn.

She was very approachable, passionate about her work and genuine about teaching. This made the sessions a lot more enjoyable and ultimately useful in the clinical setting.

It was great to have someone available to ‘touch base’ with if we had any concerns or needed basic direction in the theatre settings.

Unbelievably supportive. Goes beyond expectations to ensure we were comfortable, knowledgeable and confident during the clinical placement...

In terms of overall experience in the IPDEU, the majority of respondents were satisfied 23.8%, very satisfied 23.81% or extremely satisfied 28.57%. Six respondents were only somewhat satisfied, and one indicated they were unsatisfied with the experience.

Asked to comment on other disciplines that ??? they would you like to see as part of interprofessional learning, respondents gave a varied list including occupational therapists, physiotherapists, social workers, dietitians, midwives, pharmacists, imaging staff and orderlies. While nursing and medicine were identified, overall the responses were supportive of including allied health staff in the IPDEU.

Respondents were able to suggest improvements for the overall experience of students in an IPDEU. Four key categories were identified: define the DEU and its objectives and sessions; have more structured sessions and activities; time the sessions better, e.g. earlier in placement; students to have more interaction outside of the structured sessions. The following quotes illustrate these four categories.

Inform us more about what the DEU is at the beginning and the objectives of the programme as it is hard to measure.

Have more sessions (we only got one) as they are really fun, interactive and helpful.

...having more sessions planned together with nursing student and medical student so they can have more opportunities to engage and share their knowledge with each other.

Ensuring that the session (simulation) was held at the beginning of the placement...

In summary, the analysis of the surveys indicated that interprofessional activities were well attended by students and there were other interprofessional learning opportunities experienced by the students, additional to those planned. Having a combined orientation and simulation scenario contributed to students' interprofessional learning and overall experience.

Students identified that peer learning opportunities provided a safe place for learning and they liked being able to share knowledge and skills with their peers. It was highlighted that peer learning opportunities were limited and it was expressed that more opportunities would be of value.

The role of the CLN was regarded as integral to the experience in the DEU by significantly contributing to the experience is a positive one for shared learning opportunities and valuable to the overall DEU experience.

Overall, the perioperative IPDEU experience was very satisfying for students, and students supported the future extension of the concept to include students from other disciplines, especially those from the allied health workforce.

This feedback is consistent with the four key themes identified in the data analysis of Working in a team, Learning together, Recognising challenges and Feeling supported.

7 Further work and conclusion

There was evidence from the staff focus groups that the IPDEU with the planned collaborative learning activities is already having an impact on student preparedness for the area. One commented that *“They definitely communicate a lot more. The lot coming through this year don’t look as scared. And they actually introduce themselves”*.

Another commented that

Yeah with the recent medical students, not like before. About 80% of them had never scrubbed before but the ones that have come around this time they have said that they have gone on a scrubbing session but can you watch me do it, which is quite good.

While the pilot project has generally had a positive impact on staff and students directly involved in the IPDEU, this one was not without challenges. Achieving a uniform placement experience has not been successful as working with both the MIT and UoA schedules has made some aspects of scheduling the interprofessional sessions difficult. An example of this was the inability to line up the transition students with the medical students for the perioperative tutorial by a general consultant. As the pilot was running in the general surgery rotation for the medical students, it also meant one out of the three groups of medical students each semester missed out on the simulation session. It also meant the timing of the sessions was often later in the medical students’ placement in the perioperative department when it would have been more helpful earlier on. Despite these constraints, the research endorses the benefits of the collaborative learning sessions for a whole range of reasons identified in the data from the focus groups and surveys.

Operationally, having larger student groups means some rearrangement of the organisation of simulations, for example, to ensure all students are involved. New opportunities arise and will be worked with in terms of the opportunity to continue to extend collaborative learning such as involving the nursing students in the OSCE’s for the 4th year medical students. The nursing students who were involved found these were a valuable insight into the patient assessment. Other opportunities include combined debriefs following theatre cases (reflection in action as students debrief with theatre staff from different disciplines) and interprofessional workshops including professional groups additional to nursing and medicine.

This work is ongoing and will form the basis for future reports, presentations and publications. As we explore other scenarios in the IPDEU, we will take cognisance of the data contained in the findings of this research project.

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