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Title	A self-determination theory analysis of reflective debrief themes about dietetic student placement experiences in hospital: implications for education
Type	Article
URL	https://clock.uclan.ac.uk/34219/
DOI	https://doi.org/10.1111/jhn.12808
Date	2021
Citation	Markwell, Katherine, Ross, Lynda J., Mitchell, Lana J. and Williams, Lauren T. (2021) A self-determination theory analysis of reflective debrief themes about dietetic student placement experiences in hospital: implications for education. <i>Journal Of Human Nutrition & Dietetics</i> , 34 (1). pp. 115-123. ISSN 0952-3871
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It is advisable to refer to the publisher's version if you intend to cite from the work.
<https://doi.org/10.1111/jhn.12808>

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RESEARCH PAPER

A self-determination theory analysis of reflective debrief themes about dietetic student placement experiences in hospital: implications for education

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Keywords

dietitian, placement, reflection, self-determination theory, teaching.

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How to cite this article

Markwell K.E., Ross L.J., Mitchell L.J. & Williams L.T. (2020) A self-determination theory analysis of reflective debrief themes about dietetic student placement experiences in hospital: implications for education. *J Hum Nutr Diet*. <https://doi.org/10.1111/jhn.12808>

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Abstract

Background: Healthcare placements in dietetics education contribute significantly to student learning. Exploring students' self-conceptualisation of placement experiences may provide insights to better support learning. Self-determination theory (SDT) has been used to seek insight into clinical and educational settings but has not yet been applied to dietetic placement learning. The present study investigated dietetics students' reflections of key influences on placement learning experiences and their alignment with an SDT framework.

Methods: A post-placement two-stage critical incident debrief was conducted with seven successive cohorts (168 students) of dietetic undergraduate students on final placement. In debriefs, students' anonymous themes were collected and discussed, inductively analysed, and then mapped against an SDT framework of psychological and motivational constructs.

Results: Nine key themes were identified that impacted upon placement experiences. Four themes related to framework constructs: (1) *Supervisor (and Peer) Autonomy Support*; (2) *Perceived Competence*; (3) *Relatedness*; and (4) *Autonomy and Intrinsic Motivation*. Non-SDT themes were also present, including: (5) *Learning Environment and Experience*; as well as themes about professional behaviours and identity: (6) *Teamwork and Interactions*; (7) *Managing Emotions and Self-Care*; (8) *Dietetic Communications and Behaviours*; and (9) *Developing a Professional Identity*.

Conclusions: Embedding a structured debrief in the curriculum and using a psychological motivational SDT framework to analyse themes arising can provide valuable information about the learning needs of students on placement with potential for wider application in dietetic learning and teaching and workforce employability. The current findings may have application in university curricula before and after professional placement.

Introduction

Work-based learning placements in university curricula allow students to translate their theoretical knowledge into professional practice aiming to develop and demonstrate competence in many professions, including

dietetics. Miller's Pyramid is a frequently used placement theoretical framework that describes the process of how university learning or 'know/knows how' translates into health placement learning of 'shows how/does' in competency based assessment^(1,2). Theoretically, it does not explain what enhances students' adoption of skills in

placement learning. According to Kolb's learning cycle, reflection-on-action may enhance work-based learning⁽³⁾. In healthcare, curriculum reflection is used to enhance the development of critical reasoning skills on student placement and thereby their clinical reasoning^(4,5). Portfolios and simulated scenarios have been used within university curricula to develop reflective skills^(6–9). The final clinical placement for nutrition and dietetic students is a time of professional learning at the same time as adapting to the numerous pressures and challenges of dietetic service provision in the hospital work environment.

Guided reflective critical incident debriefs have been used with physiotherapy students to enhance placement learning⁽¹⁰⁾. A critical incident 'is a significant situation, event or opportunity that has occurred in practice, and has the potential to provide insight and/or stimulate professional development'⁽¹¹⁾. Critical incidents can be both positive or negative⁽¹²⁾ and are an important method for developing reflective skills⁽¹³⁾. In the study by Delany and Watkins's⁽¹⁰⁾, physiotherapy students were guided to identify and reflect with their peers and a facilitator on critical incidents during placement. Open sharing and confidentiality precepts were included. In focus groups conducted following reflective debriefs, physiotherapy students described 'validation and sharing' and 'spheres of knowledge' as experienced outcomes⁽¹⁰⁾. Critical incident debriefing has also been taught to newly qualified nurses to assist their coping with the healthcare environment⁽¹⁴⁾. Osland¹⁵ investigated the risk of burnout for 87 Australian acute care dietitians and found that 94% used collegial debriefing as a self-care strategy, suggesting that it is a suitable strategy for dietetics.

Self-determination theory (SDT), originally proposed by Deci and Ryan⁽¹⁶⁾, is a psychological theory that encompasses constructs that support individuals' engagement and motivation. It has been widely used in healthcare education and research to investigate patient-clinician relationships and outcomes^(17–19), as well as in education research⁽²⁰⁾. It has been argued that SDT be used to inform clinical teaching and research with the aim of improving student clinical learning^(21,22). Within the framework, there are three psychological needs that need to be satisfied for optimal well-being: *Autonomy*, *Competence* and *Relatedness*⁽¹⁶⁾. Increasing levels of these needs has been found to be associated with more *Intrinsic Motivation*^(17,23,24). A further SDT construct, *Autonomy Support*^(17,23,24) provided by others, including in therapeutic⁽¹⁸⁾ or educational⁽²⁵⁾ settings, has been shown to increase levels of psychological needs and intrinsic motivation^(16,23,24). This framework may be applicable to giving insight into placement learning.

A review by Orsini *et al.*⁽²¹⁾ summarised how clinical teachers' behaviours can improve satisfaction of SDT

needs, including autonomy supportive behaviours. Their summary described how teacher behaviours that are less directive or 'controlling' may enhance *Autonomy*; providing structured guidance, constructive feedback and praising quality may increase perceived *Competence* (feeling capable); and listening and developing a student dialogue and listening may enhance *Relatedness* (connection with others)⁽²¹⁾. *Supervisor Autonomy Support* in a dentistry student qualitative study was associated with improved teaching, improved *Relatedness* (connections with others) and higher student *Intrinsic Motivation*⁽²⁶⁾. Despite use in other healthcare professional education settings, SDT has not previously been applied to dietetic education and was chosen as the theoretical framework within which to explore dietetic students' key learning experiences shared in a critical incident post-placement debrief.

The present study aimed to (i) explore influences on dietetics students' placement learning revealed in a reflective post-placement debrief and (ii) investigate the alignment of themes identified in a post-placement debrief with a self-determination theory framework. The results obtained will provide valuable insight into student placement learning.

Materials and methods

Study design

This was a qualitative study of student reflections on placement collected as part of a learning and teaching intervention in the Griffith University Bachelor of Nutrition and Dietetics Programme. Data were collected with seven successive cohorts of students completing final placement between June 2016 and June 2019. An iterative, design-based research cyclic approach was used to improve the debrief in each subsequent implementation^(27,28) as used broadly throughout the curriculum including attempts to increase student confidence for placement preparedness⁽²⁹⁾. Minor improvements were made between iterations. Each debrief included two phases (Fig. 1). The debrief also had pedagogical learning objectives, and the debrief process is described in full elsewhere⁽³⁰⁾. All students provided informed consent. Ethical Approval was obtained from the Griffith University Human Research Ethics Committee prior to commencement (2014/826).

Data collection

Stage 1: Small group debrief sessions (Fig. 1)

Small groups were formed for the discussions. After an icebreaker exercise, each student was encouraged to share and discuss a critical incident/s⁽¹¹⁾ and reflect upon their learning. Ground 'rules' based on Delany and Watkins's

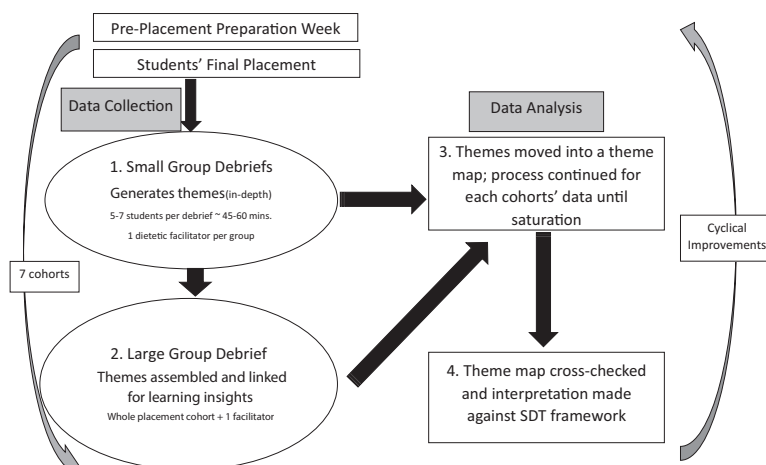


Figure 1 Debrief Methods and Data Analysis

protocol⁽¹⁰⁾ were emphasised with a focus on confidentiality and trust⁽³¹⁾. The definition of critical incidents was explored, and students were encouraged to consider: (i) the type of event; (ii) the persons involved; (iii) description of event (positive or negative); and (iv) why it happened and their initial reactions. Students then shared critical incidents and were asked to summarise their recalled learning or challenge by documenting a theme/s in a single word or phrase. For cohorts 1 and 2 there was a single student scribe per group with an instruction to 'jot down main themes of what people are talking about'. For cohorts 3–7 students documented themes directly onto sticky notes with one theme per note, to encourage more active reflection by all students on their learning experience. To ensure confidentiality no recordings were made but some notes were made by facilitators and research assistant observers during and afterwards and all themes and other notes were collected.

Stage 2: Large group reflective debrief session (whole cohort) (Fig. 1)

The whole cohort then participated in a 30-min debrief with a single facilitator in which small group themes were shared in a manner that avoided specific details and discussed broadly. Cohorts 1–2 shared their de-identified small group themes on a voluntary *ad hoc* basis. Themes were written on a whiteboard and links were made between themes during facilitated discussion. For cohorts 3–7, sticky notes were clustered by students to 'fit' together as themes on the whiteboard and the themes were named accordingly. This method of concept mapping with discussion is similar to focus group methods used to inform and generate debates and reach consensus⁽³²⁾. Photographs of theme maps were collected for analysis.

Data analysis and interpretation

Themes created by students in either group were then grouped together in data analysis (Fig. 1). Students were thus embedded within the research process as active interpreters of themes and sub-themes. The large group themes (and their links) were interpreted into broader themes by the large group facilitator and/or students in their discussions in each cohort and this was also used to inform theme linkages.

Thematic analysis⁽³³⁾ used inductive coding of collated student's themes initially. Stage 1 themes were treated as if they were initial codes of a full thematic analysis process using Braun and Clarke's framework⁽³³⁾. A thematic map was generated with codes being formed into themes that reflected codes. Themes that appeared related were placed nearer each other in a theme map. Stage 2 large group themes were then added with consideration of any linkages. This process was repeated with each cohort group. There were strong recurrent themes occurring by the time cohort 4 themes were added, indicating data saturation was being approached and data from further cohorts confirmed this. A refining process occurred with the addition of each cohort's data until the final map was produced with inductive themes, linkages and codes becoming sub-themes/being joined into sub-themes. Theme linkages were based on notes about more detailed data, large group debrief sessions' concept mapping and the apparent closeness of themes (e.g. sub-themes on negative feedback and positive feedback were considered as close/linked). The theme map with linkages was then cross-checked by two other researchers for data 'fit' with original data to enhance rigour.

The coded thematic map was then deductively coded and interpreted (Fig. 1) against the SDT framework constructs^(16,24) that were proposed by Orsini *et al.*⁽²¹⁾ as most

supportive for clinical teaching. These were: *Intrinsic/Autonomous Motivation*: motivation that is purposeful, self-generated involves activities that give enjoyment; the three SDT needs: *Autonomy*: Ownership, purpose and choice in undertaking activities; (Perceived) *Competence*: akin to self-efficacy and confidence in the ability to undertake tasks (as perceived by the individual); and *Relatedness*: Sense of personal belonging and connectedness to others; and; *Autonomy Support*: support that supports a person to meet their SDT needs and increase intrinsic motivation that is delivered by another individual such as healthcare worker, educator or partner. For example, individualised care or informational praise can be considered as *Autonomy Supportive*. More details of the SDT framework, definitions and relationships between constructs can be found by the original developers of SDT^(16,24,34).

Table 1 Cohort demographics

	Debrief participants	Male	Female
2016 T1	30	2 (7%)	28 (93%)
2016 T2	14	2 (14%)	12 (86%)
2017 T1	24	2 (8%)	22 (92%)
2017 T2	28	6 (21%)	22 (79%)
2018 T1	24	3 (13%)	21 (88%)
2018 T2	26	3 (12%)	23 (88%)
2019 T1	22	2 (9%)	20 (91%)
Totals	168	20 (12%)	148 (88%)

Timepoint 1 (T1) and Timepoint 2 (T2) refer to when postplacement cohort debrief data were collected-T1 data were collected in June and T2 in November of the stated years.

Using the SDT framework (Fig. 1) and deductive coding, any themes considered analogous with an SDT construct had their name changed to that construct as per deductive coding (e.g. confidence was changed to *Perceived Competence*). The primary coding was conducted by a research assistant (KM) who was not familiar with students, had observed debriefs and had training in SDT, ensuring more objectivity and a thorough analysis. Themes that did not fit within the SDT framework and sub-themes kept their original inductive theme name. Adapted theme names and relationships were mapped in a table with key themes, sub-themes, relationship to the SDT framework, and theme relationships. This table was cross-checked and a final figure of all themes and relationships was created.

Results

The study participants comprised 168 undergraduate dietetic students who participated in the debrief, with between 14 and 30 students per cohort. The majority of participants were female (88%), ranging from 79%–92% of each cohort (Table 1).

Figure 2 depicts the key themes and their categories.

Further details are provided in the Supporting information (Table S1).

Self-determination theory themes

Supervisor (and Peer) Autonomy Support: Encompasses student experiences of their supervisor/s and of receiving

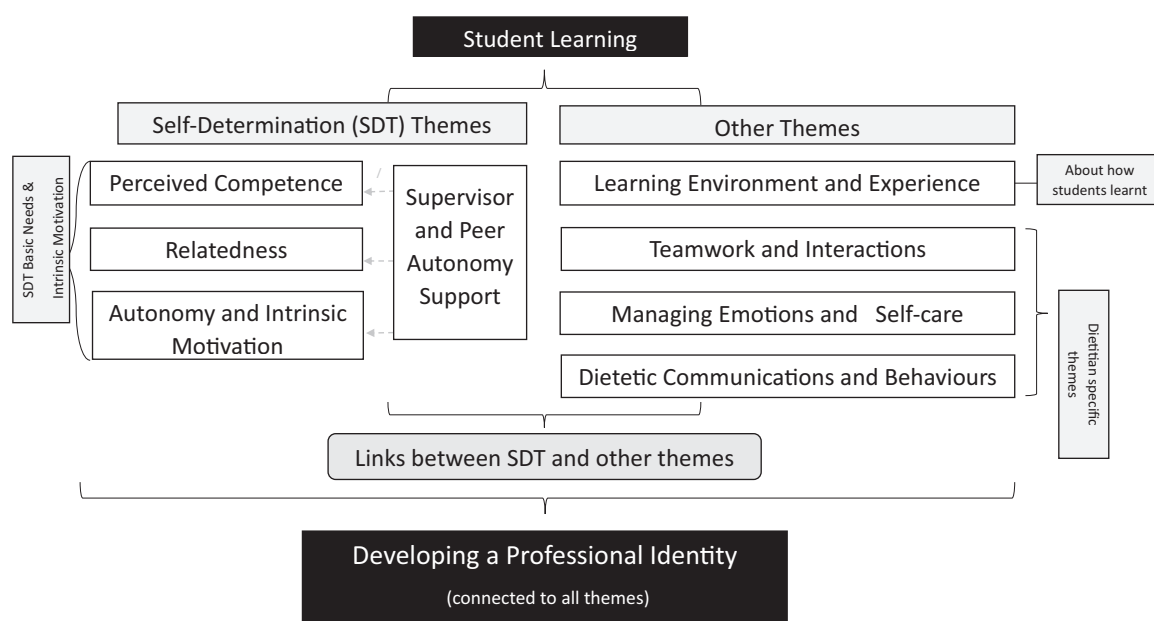


Figure 2 Key themes from Dietetic Students' Post-Placement Debriefs

supportive feedback on their own performance (e.g. constructive, impersonal feedback, wake-up call).

Perceived Competence: appeared as confidence in students' themes e.g. confidence building, empowerment.

Relatedness was less strong but linked to other main themes. This construct was impacted by interactions with supervisors, healthcare professionals, peers and patients.

Autonomy and Intrinsic Motivation: Autonomy was about taking responsibility for learning including communication with supervisors. Motivation was highly linked with this.

Other themes

Learning Environment and Experience The learning experience was a key aspect of placement with multiple complex sub-themes. It described aspects including being tenacious, difficulties in meeting expectations, the learning process and experience, and work-based learning as a concept (e.g. jumping in the deep end, resistance and persistence).

Teamwork and Interactions Being treated as a part of a team and working in a team made students feel valued, however being a student could also involve feeling unwelcome or negative experiences (e.g. collective responsibility; condescending/ belittling).

Managing Emotions and Self-Care These aspects were persistent across all student cohorts. A number of negative emotions needed to be managed by students, however students also identified that part of becoming a dietitian was emotional management for patient experience and outcomes (e.g. rollercoaster, take care of yourself).

Dietetic Communications and Behaviours Communication was predominantly concerned with communication with patients (rather than supervisors). Aspects included rapport building and patient centred care/empathy.

Developing a Professional Identity (Overarching Theme) This theme encompasses students' developing a sophisticated professional understanding of what being a dietitian involves (e.g. making a difference, know professional limitations, self-empowerment).

Discussion

This is the first documented study in dietetics education to apply a psychological SDT framework to examine students' placement learning. The findings indicated the framework's constructs were consistent with many of the themes identified and it was helpful to inform influences on student placement learning and experiences, with important implications for placement education. In secondary education student placements, student teachers

improved their own skills demonstration and learning when their SDT intrinsic psychological needs were fulfilled⁽³⁵⁾ and, potentially, their findings may be applicable to dietetic' placement learning. One of the key findings in the present study was regarding autonomy support.

Autonomy supportive behaviours in this study by immediate supervisors, and to some extent peers, improved students' intrinsic psychological needs and motivation. This is consistent with the findings of other studies reporting that healthcare students' emotional experiences can be affected by mentoring partnerships⁽³⁶⁾ and that students consider belongingness to be of key importance for clinical learning⁽³⁷⁾. Dietetic supervisory practices and their variability have been shown to impact upon the development of student competence⁽³⁸⁾. There are many supervisory autonomy supportive behaviours that could potentially benefit students on placement⁽²¹⁾. Feedback including praise, particularly informational praise^(39,40) was frequently mentioned in themes as being helpful. Sub-themes identified that a lack of consistent feedback, specific parameters or unachievable standards hindered placement learning and progress. Healthcare students' emotional experiences can be affected by mentoring partnerships⁽³⁶⁾ and belongingness, considered by students to be of key importance for clinical learning⁽³⁷⁾. In the present study, relationships were also important for students. Alongside dietetic supervisors and teams, relationships with multidisciplinary (MDT) members, patients and student peers impacted belongingness (or *Relatedness*). Therefore, improving supervisory relationships and belongingness may enhance student learning and should be a key consideration for placement success.

These findings suggest that empowering dietetic placement supervisors to create an autonomy-supportive environment may enhance learning. A qualitative study⁽²⁶⁾ of autonomy supportive clinical teaching strategies included a theme about providing feedback that was timely, constructive, included positive elements and promoted self-reflection. This appears to align with students' interpretations in the present study regarding what is helpful on placement. Informing this further, a literature review⁽⁴¹⁾ about high quality verbal feedback practices in healthcare training identified several steps. These included giving feedback close to the event, providing clarification, ensuring that the student could create practical next steps, respecting the student's autonomy and choice, and maintaining a strong learner-teacher relationship. The latter two of these elements of feedback are particularly relevant to the findings in the present study. Thus, improving feedback practices may be a practical opportunity for clinical supervisors to enact behaviours that may assist meeting placement students' intrinsic psychological needs.

Students also talked about the need to accept feedback and how this could affect their learning experience. Johnson *et al.*⁽⁴¹⁾ mentioned the autonomous aspect and student ownership of feedback. How students respond to feedback may not only impact their learning experience, but also challenge supervisors, especially novice dietetic supervisors, as identified in a qualitative study by Palermo *et al.*⁽⁴²⁾. There appear to be two facets to autonomy support for dietetics education: (i) supervisor feedback and how it is delivered and (ii) the student's own attitude and response. In the theme *Autonomy and Intrinsic Motivation*, students identified taking responsibility for learning including communication with supervisors as being important to their learning experience. Thus, developing students' ability to increase acceptance of feedback and seek clarification if needed are skills that could be developed prior to placement to assist student competency development. Although students preferred not to receive negative feedback, it is important to empower students with the ability to seek and respond to constructive criticism. Although negative feedback could reduce autonomy support, it also provided the impetus for some to improve their practice (e.g. 'wake-up call'). This highlights the need to make negative feedback constructive as shown in the study of nursing students by Groves *et al.*⁽⁴³⁾.

Students appeared to enhance their meeting of their intrinsic psychological needs by overcoming placement challenges. An Australian study of nutrition and dietetics students⁽³⁸⁾ noted that impacts upon self-confidence (akin to *Perceived Competence*) included workload in addition to autonomy, supervision attributes and practices. These findings align with the current analysis using the SDT framework, with similar constructs being identified: relatedness, autonomy and supervisor autonomy support. A qualitative study of dentistry clinical supervisors⁽²⁶⁾ also mentioned the theme 'Providing appropriate clinical challenges' with the proviso to not frustrate student motivation or competence. Thus, the SDT framework could inform strategies to coach supervisors in to assist students' dietetic placement engagement and learning.

The findings of the present study also gave some insight into how students experienced the placement learning environment and the dietetic professional behaviours that were learnt. Undertaking placement was perceived to be a challenging situation, similar to the findings reported in other studies⁽³⁸⁾. Students reported needing to be persistent, adaptable and motivated, with those who reported doing well appearing to take more ownership of their learning, including managing their self-care and emotions and exercising autonomy. Students taking learning responsibility on placements has been found to be important elsewhere too⁽⁴⁴⁾. The adoption

of dietetic behaviours was identified in themes as well: teamwork and interactions, dietetic communications and behaviours, and managing emotions and self-care were clearly identified. For the latter, students adopted these skills both for themselves and also to provide excellent patient care. Many of these facets of professional identity are mirrored in a survey of Australian dietitians about key professional competencies,⁽⁴⁵⁾ including interpersonal communication skills, nonverbal communication, professional values and counselling skills, suggesting that placement learning is in alignment with competencies.

Developing a professional identity was the overarching theme. Professional identity formation can be viewed as a reconstruction of self potentially including 'disembodiment' and removal from self as part of the progression to becoming a dietitian⁽⁴⁶⁾. Students appeared to develop new ways of communicating, behaving and emotionally self-regulating in their placements. Cruess *et al.*⁽¹⁾ argued that identity formation should be included in an adaptation of the aforementioned placement learning theoretical framework, Miller's Pyramid⁽²⁾, and that this is potentially the primary objective of medical education⁽⁴⁷⁾. It appears that this was also the culmination of the placement experience for dietetics students. Besides supervisors and peers, actions of the MDT team also influenced students' development of a dietetic professional identity.

SDT framework psychological constructs that were proposed to enhance placement education⁽²¹⁾ were identified in the themes of the present study. Relationships between themes appeared in congruence with other self-determination theory findings^(34,48); for example, perceived competence was related to improved autonomy and intrinsic motivation. Other themes identified were associated with SDT themes. The SDT framework did appear to enhance understanding of how to support dietetic placement learning. The currently widely used Miller's Pyramid^(2,49) does not provide this insight. Other non-framework themes did have some aspects that were more consistent with an adapted Miller's Pyramid. For example, dietetic professional behaviours and forming a dietetic professional identity, respectively, are similar to can/does and proposed 'is' in an adapted Miller's Pyramid^(1,2). Although Miller's Pyramid is the predominant framework used in health training, and the SDT framework appears to assist understanding of student learning, it is noted there are numerous work-based learning (WBL) models⁽⁵⁰⁾ that may be also be useful. These have similar limitations to the SDT framework in terms of not necessarily being able to isolate influences on constructs to placement experiences. There may also be overlap with the SDT framework; for example, autonomy and support have been identified elsewhere as being important for WBL⁽⁵⁰⁾.

Strengths and limitations

Although efforts were made to create a 'safe space' for confidential sharing, students may still have been inhibited in the small group sharing. The confidentiality precepts also precluded more in-depth data (e.g. audio recordings); however, the similarities of themes to the findings of existing studies do suggest that the data collected were trustworthy and pertinent. Qualitative findings are transferrable for similar groups⁽⁵¹⁾ and so the present study can be used to inform dietetic training more broadly. The critical incident technique, focused on intense learning experiences, provided insight into specific placement learning experiences rather than a broader insight potentially. This may mean that data may give more insight into the specific learning challenges encountered. A strength of the present study was student's own thematic interpretation, which added to data trustworthiness.

The placement learning experience presents challenges and opportunities with respect to meeting students' intrinsic psychological needs. SDT appears to be a suitable framework for providing insights into specific areas aiming to improve student learning. These include identifying opportunities to meet the needs of competence, relatedness, autonomy and intrinsic motivation through autonomy supportive behaviours from immediate and other supervisors and team members, with implications for university curricula.

Recommendations for placement supervisors

- Practice autonomy supportive behaviours in clinical supervision to enhance student learning, such as the provision of high-quality informative feedback to students
- Provide achievable, stepped learning experiences for students that enhance competence
- Engage with relevant hospital staff to prepare them for contact with students to create a welcoming and collegial environment

Recommendations for university educators

- Develop students' uptake and acceptance of feedback prior to placement
- Assist students in developing confidence to clarify feedback
- Focus on student's own contribution and ownership over their learning

Further studies are needed to investigate the implementation of these strategies and the impact on dietetic students' intrinsic psychological needs and effectiveness of placement learning.

Transparency declaration

The lead author affirms that this manuscript is an honest, accurate and transparent account of the study being reported. The reporting of this work is compliant with high quality qualitative research methodology. The lead author affirms that no important aspects of the study have been omitted and that any discrepancies from the study as planned have been explained.

Acknowledgments

We thank the students for their participation and the debrief facilitators. We also thank Clare Van Dorssen for her assistance with the graphical abstract. The project received funding from a grant held by Professor Stephen Billet.

Conflict of interests, source of funding, authorship

The authors declare that they have no conflicts of interest.

The project received funding from a grant held by Professor Stephen Billet from the Australian Government Department of Industry, Innovation, Science, Research & Tertiary Education, Office for Learning and Teaching (OLT) Grants - (ID15-4902).

All authors were involved in study design and data collection. Data analysis was undertaken primarily by KEM and was supported by the other authors. All authors contributed to planning and writing of the manuscript, and approved the final version of the paper submitted for publication.

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Supporting information

Additional supporting information may be found online in the Supporting Information section at the end of the article.

Table S1. Key themes descriptions and links to self-determination theory (SDT) and other themes.