



Understanding factors that impact the acquisition of Independent Living Skills among young people transitioning from Out-of-Home Care

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ABSTRACT

Background and Aims: Independent Living Skills (ILS) are essential to support young people as they enter adulthood. Negative outcomes are consistently observed across a variety of different independent living areas of life for care experienced young people. This study aimed to analyse ILS measure scores across eight ILS domains and overall, completed by young people from Western Australia (WA), to understand how they differ between participants who were still in-care ($n = 49$) and who had left-care ($n = 73$), and what factors (such as care experience and personal characteristics) moderate the acquisition of ILS. For this paper, the overarching concept of ILS is defined by young people's ILS measure scores, where higher self-reported scores are interpreted as greater confidence and competence in ILS (overall and for each of the eight ILS domains).

Methods: Participants ($N = 122$) aged between 15 and 25 years completed an ILS measure as part of the Navigating Through Life, longitudinal, mixed-method, population-based study. This present study considers data from wave 1 (of 5) of the NTL study, where eight ILS domains were identified: Financial Management, Knowledge of Accessing Available Supports, Managing Housing, Education Planning, Job Seeking, Health Risk Management, Domestic and Self-help Task, and Managing Relationships. This study explored how dependent variables (the ILS overall scores and 8 ILS domain scores) are associated with participants' care experience and demographic characteristics (the independent variables) via linear regression and an exploratory multivariate moderator analysis.

Results: The in-care and left-care groups' ILS measure scores were comparable. Of the independent variables, care status, self-determination, and regionality were significant ($p\text{-value} < .05$), predicting greater ILS measure scores across the ILS domains and/or overall. Whereas the independent variables of placement stability, longest placement type, gender, taking part in an enhanced leaving care scheme (ELCS), and Aboriginal and Torres Strait Islander status were not significant predictors of higher ILS measure scores. Moderator analyses were conducted for the overall ILS scores, the Health Risk Management, and the Domestic and Self-help Task domain scores (dependent variables). No significant interaction effects were found for care status, self-determination, and regionality, which were identified as significant factors in and of themselves.

Discussion and Conclusion: This study emphasises that ILS domains are interlinked, and findings should be utilised to further highlight the significance of the transition to adulthood stage, especially given the similarities in scores for both in-care and left-care groups. Future research could look at transition pathways that prioritise different ILS domains depending on young people's different needs at different times to support their overall ILS acquisition.

1. Introduction

Growing up in care affects many children around the world. In most

instances, prior to entering care, children endure adverse childhood experiences and are vulnerable as a result. Children and young people may have endured complex family situations, where they may have been

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exposed to poverty, poor parenting, abuse, neglect, contextual safeguarding issues, parental substance misuse, mental health challenges, and domestic violence (Bennett et al., 2022; O'Donnell et al., 2016; Ubbesen et al., 2015). Children who enter the out-of-home care (OOHC) system as a result of such adverse family and childhood experiences are considered to be some of the most vulnerable children across societies (OECD, 2019) and may have to contend with additional unfavourable impacts of their country's OOHC system (Commissioner, 2017), both while living in OOHC and once they have transitioned out of OOHC and into adulthood.

It has previously been reported that there are better outcomes for those living in OOHC compared to those who remain at home or on the 'edge-of-care' (Macpherson & Oakley, 2019). However, services need to be mindful of the impact that pre-care and in-care experiences could have on the acquisition of Independent Living Skills (ILS) as young people move through adolescence into early adulthood and transition from OOHC. Various ILS are essential for life after OOHC, and earlier formative experiences can shape a young person's opportunities and ability to learn and develop ILS.

1.1. The transition from OOHC impacting outcomes

Transitioning from OOHC is one of the most critical periods in a care-experienced person's life, as support systems that can help are often complex and inflexible (Baker, 2017). Aging out of OOHC is a time of transition and adjustment, where roles and legal responsibilities shift and change, and new challenges and adversities are faced (Mendes et al., 2023; Stubbs et al., 2023). As a result, poorer life outcomes across different ILS domains have been observed in research, such as how young people preparing to leave OOHC can experience lower levels of employment and educational attainment (Mendes et al., 2023). Further, there can be a knock-on effect on other ILS domains, such as without employment, financial management may be hard, and this can lead to young people experiencing difficulties finding and/or maintaining housing (Sulimani-Aidan, 2015) or even experiencing homelessness. The impact of such adverse outcomes is often most pronounced throughout the transition period and into early adulthood.

For care-experienced young people an accelerated transition between childhood and adulthood should be avoided; otherwise, they may contend with more significant life changes in a shorter space of time than their peers, regardless of individual readiness (Stein, 2005). Exiting OOHC has been described as navigating instant adulthood (Stein, 2008) with a need for young people to be self-sufficient (Parsons et al., 2020; Propp et al., 2018). Therefore, given that OOHC systems often have a distinct hard endpoint (usually the legal age of adulthood; 18 years), the transition time should be viewed as a process of 'soft transition' where preparation, planning and the acquisition of ILS are acknowledged as a priority, rather than an event.

Leaving OOHC research has been assessed as lacking theorisation (Glynn, 2021; Stein, 2005). Alongside this, previous research has highlighted a need to develop psychometrically robust measures that inform the current lack of a universal and agreed ILS definition (Starr et al., 2024). For this paper, ILS is understood as an area within the research that needs further exploration. ILS is defined as an individual's ability to perform everyday tasks for 'functional independence' (Nguyen et al., 2020), which supports young people in managing their own lives.

1.2. ILS development in OOHC

Children and young people's personal characteristics can affect ILS acquisition. Individual characteristics, or assumptions, are 'highly influential' (Munro, 2006) concerning how a young person's care experience meets their needs. Demographic factors such as age, ethnicity, gender, disability, location, and relationships with parents and siblings all impact their lived care experiences (Harrison et al., 2022; Mendes & Chaffey, 2023). Consequently, acquiring ILS and

knowledge can be more complex for care-experienced young people than for general populations.

Notwithstanding, OOHC itself is associated with trauma (Baker, 2017) and adversity (Gill, 2021) and a young person's in-care experiences, such as the types of 'placement' they live in, the level of stability they experience, and how much preparation for leaving OOHC takes place can influence outcomes during the transition to adulthood from OOHC, especially when learning ILS (Glynn & Mayock, 2018). A lack of consistency in how young people in OOHC are supported in acquiring ILS can potentially create delays in obtaining ILS and lead to deficits (Munford, 2021). OOHC systems may create a replication of harms, which could further compound and exacerbate trauma symptoms (Forkey & Szilagyi, 2014). For example, the transience and changes, such as numerous placement moves while in OOHC (UK Government, 2006), may lead to changes in school, relationships, and adjustments in one's sense of self, identity, and belonging.

Assisting young people in acquiring ILS before they leave OOHC could be considered best practice to support the transition to adulthood (Reid, 2007). Tangible, practical skills such as shopping, cooking, and hygiene management are important, as are emotional and interpersonal skills when navigating adult life (Stein, 2008). In Victoria, Australia, the 'Beyond 18' study (Muir et al., 2019) found mixed results, with young people demonstrating confidence in their practical life skills. However, participants were less confident with emotional and interpersonal skills despite an important link identified between the two.

Young people are often too ill-prepared to manage in early adulthood (Furey & Harris-Evans, 2021; Rice & O'Connor, 2023). Different ILS are needed at different times, depending on circumstances. Yet, not all young people leaving OOHC have the same opportunities and resources to scaffold, support, and strengthen their development of ILS across the various aspects of life (Sulimani-Aidan & Benbenishty, 2011). Therefore, having opportunities to practice ILS in preparation for the transition from OOHC during the emerging adulthood developmental stage is critical (Arnett, 2000).

1.3. The Australian context

Young people in Australia (including those in OOHC), which is the context for this study, face significant challenges across various aspects of life. For example, 20 % of 15 to 24 year-olds are living on 60 % of the median income in Australia (Davidson et al., 2023; Ross, 2023); 1 in 6 young people in Australia have experienced homelessness (Cover, 2020); 42 % of Australia's homeless population is under the age of 25 years (AIHW, 2024); almost 8 % of 15 – 24 year-olds are not in education, employment or training (Australian Bureau of Statistics, 2022); and between 2017 and 2018, 26 % of young people aged 15 – 24 self-reported having a long-term mental health issues, of which anxiety (17 %) was most commonly reported (Australian Government, 2021a, 2021a).

The OOHC population in Australia grows year on year. As of 2022, 46,000 children were in OOHC (AIHW, 2021). Nationally, over 3,000 young people transition from OOHC annually (AIHW, 2017). As of June 2021, the majority of young people in OOHC were living in foster (27 %) and kinship care (39 %) (Australian Government, 2022, 2022; Hodgson et al., 2022). Staggeringly, four in ten children in OOHC are Indigenous children (Australian Government, 2020, 2021b). Guided by legislation, OOHC services in Australia are provided by Child Protection Services, where each State and Territory develops and implements policies and programmes independently for young people in and leaving OOHC.

The Australian Government recommends that young people have a leaving care plan; however, this is not mandated. All States and Territories provide after-care support beyond the age of 18, but this is also not mandated despite studies reporting that young people who leave OOHC lack maturity and the required ILS (Mendes, 2019). States and Territories have pledged to provide extended care beyond the age of 18 and

up to age 21, with New South Wales implementing this policy in February 2023 and Queensland in July 2023 (Baidawi, 2016), which will offer greater opportunities for care-experienced young people to develop ILS from supportive people in their life.

1.4. This present study

This present study focuses on an OOHC cohort living in Western Australia (WA) who were either at an age where they were preparing to leave OOHC (15 – 18 year-olds) or had already left (18 – 25 year-olds). As of June 2020 in WA, where this study's participants are from, there were 4,839 children and young people in OOHC (AIHW, 2021).

The overall aim of this study is to examine how participants' different demographic and care experience factors (the dependent variables, described in the Methods section 2.4) impact the development of ILS, identified by participants' completion of an ILS measure (the independent variables) providing an opportunity to analyse the findings as very few ILS assessment tools have been validated (Garcia-Alba et al., 2021). Validation of the ILS measure used in this study is described in the Methods section (2.3), and the statistical analysis for each research question is described in the Methods section (2.4).

Higher overall scores may reflect young people's sense of preparedness and planning concerning the transition from OOHC to adulthood. Analysing different demographic factors is important to develop an understanding of variance across personal characteristics and individualities, which have previously been noted as impactful on post-care outcomes (Muir et al., 2019).

The purpose of this paper is to consider the following eight ILS domains as a conceptualisation of ILS, to support policy and practice development:

1. The 'Financial Management' domain considers debt, financial responsibility, and budgeting.
2. The 'Knowledge of Accessing Available Supports' domain considers skill enhancement opportunities and key help-seeking attitudes.
3. The 'Managing Housing' domain represents understanding housing options, applications and tenancies, and navigating relationships related to housing, such as with a landlord.
4. The 'Education Planning' domain refers to options, aspirations, and attainment.
5. The 'Job Seeking' domain considers identifying and applying for work and learning employability skills.
6. The 'Health Risk Management' domain reflected on health risks, such as substance use and sexual health.
7. The 'Domestic and Self-help Task' domain includes daily living tasks, such as doing laundry, shopping, cooking, travel, and online internet use.
8. The 'Managing Relationships' domain relates to interpersonal skills, understanding safe relationships, and maintaining contact and communication with people who matter to the young person.

The research questions guiding this study are:

1. How do the young people in care and those who have left care compare in terms of overall ILS scores and scores for each of the eight ILS domains, respectively?
2. What care experience and personal characteristic factors (DVs) influence the development of ILS, overall and across the eight ILS domains (IVs), respectively?
3. What, if any, factors (DVs) moderate ILS measure scores, overall and across the eight ILS domains (IVs)?

2. Materials and Methods

This present study reports on a cross-sectional sub-set of data from the first wave of the Navigating Through Life study.

2.1. Navigating Through Life (NTL)

Navigating Through Life (NTL) was a longitudinal, mixed-method, population-based study conducted in WA. The study was conducted over five waves (Parsons et al., 2020), and each wave consisted of interviews and the collection of outcome data from standardised measures to track young people's journey through OOHC and beyond.

Young people completed the ILS measure to accompany interviews. Participants were recruited through leaving care services and the Department of Communities in WA, via their caseworkers. Leaving care services focus on supporting care-experienced young people in their preparation to leave OOHC, the transitional time, and after-care support (post-18). In WA, The Towards Independent Adulthood (TIA) Trial (Consulting, 2020) intended to enhance care leavers' social and economic wellbeing, contributing to better ILS, but this programme ceased in 2020. In 2021, Home Stretch WA, the extended care model for 18 – 21 year olds, was adopted to support care experienced young people in early adulthood.

Data was collected between 25th April 2019 and 5th May 2022, where participants completed data collection instruments via the REDCap App (Harris et al., 2009) on iPads or an online Qualtrics survey. NTL ethics approval was granted by the Curtin University Human Research Ethics Office, Perth, Western Australia (for the project 'Longitudinal prospective mixed methods study of youth in and transitioning out of OHC').

2.2. Participants

The sample included 122 participants who completed NTL's Wave 1. Young people participating had met two inclusion criteria: (1) they had been in OOHC for at least six months, and (2) they were aged between 15 and 25 years. Table 1 provides a breakdown of participants' experiences and demographic details.

Participants in this study were initially grouped by care status into either the in-care group ($n = 49$ or 40.2 %) or the left-care group ($n = 73$ or 59.8 %). Nearly half of the sample (48 %) entered OOHC at age five years or younger, and nearly two-thirds of the sample experienced up to six moves while in OOHC. Considering the longest placement type across the whole sample, 64.8 % ($n = 79$) experienced a 'family care setting' (foster or kinship care), which is comparable to statewide data (78 %) (Government of Western Australia, (2022), 2022). Of the left-care cohort, 19.2 % ($n = 14$) accessed an enhanced leaving care service (ELCS).

Reflecting on the overall sample, 57.4 % were female and 32.8 % ($n = 40$) self-identified as Aboriginal or Torres Strait Islander. Nationally, around 35 % of the OOHC population were reported as Indigenous (Mendes et al., 2023). Based on participants' location at the time of completing their ILS measure, 62.3 % ($n = 76$) of the sample lived in what are defined as 'Major Cities of Australia'. Data from 2021 (AIHW, 2022) highlights that 54 % of the national OOHC population live in Australian 'Major Cities'.

Missing data was identified for the following variables: Stability Score (in-care: $n = 1$; left-care: $n = 2$); Self-determination Score (in-care: $n = 3$; left-care: $n = 6$); Longest Placement Type (left-care: $n = 2$); Gender (in-care: $n = 1$; left-care: $n = 2$); and Location (in-care: $n = 3$; left-care: $n = 3$). All participants completed the ILS measure, providing overall scores ranging between 75 and 140 (out of a possible 140).

2.3. Data sources

2.3.1. The ILS measure

The ILS measure incorporated items developed for use by the New South Wales Government Department of Communities and Justice, which was the only list of ILS intended for young people leaving OOHC in Australia (redacted for blinding), as well as the Ansell-Casey Life Skills Assessment (Nollan et al., 1998). A 54-item instrument, consisting

Table 1
Care experience and demographic details breakdown.

Care Status	In-Care		Left-Care		Total	
	n = 49	% = 40.2	n = 73	% = 59.8	n = 122	% = 100
Longest placement type						
Family-based care setting	37	75.5	42	57.5	79	64.8
Foster Care	13	26.5	26	35.6	39	32
Kinship Care	24	49	16	21.9	40	32.8
Non-family-based care setting	12	24.5	31	42.5	43	33.7
Residential Care	5	10.2	18	24.7	23	18.9
Independent Living	0	0	3	4.1	3	2.5
'Unendorsed'	4	8.2	6	8.2	10	8.2
Other	3	6.1	2	2.7	5	4.1
Enhanced leaving care schemes						
Combined	–	–	14	19.2	14	19.2
TIA Trial	–	–	7	9.6	7	9.6
Home Stretch	–	–	7	9.6	7	9.6
Gender						
Female	32	65.3	38	52.1	70	57.4
Male	16	32.7	33	45.2	49	40.2
Aboriginal and Torres Strait Islander (self-report)						
Yes	18	36.7	22	30.1	40	32.8
No	31	63.3	51	69.9	82	67.2
Location/Regionality (ASGC Classification)						
Major Cities of Australia	25	51	51	69.9	76	62.3
Inner and Outer Regional Australia	20	40.8	18	24.6	38	31.2
Remote and Very Remote Australia	1	2	1	1.4	2	1.6
	In-Care R	In-Care M	Left-Care R	Left-Care M	Total R	Total M
Stability Score	0.1–14.2	3.2	0.2–10.8	2.3	0.1–14.2	2.6
Self-determination scores	46–120	92.17	46–120	84	46–120	87.32

Notes: n = number of participants, % = percentage per care status and overall, R = Range, M = Mean.

of nine subscales, was devised, and young people scored items on a 5-point scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

Following a factor analysis, the total number of ILS measure items was reduced to 28 (redacted for blinding) and nine factors were reduced to eight. To reflect the item groupings, the eight factors were named as follows: Financial Management, Knowledge of Accessing Available Supports, Managing Housing, Education Planning, Job Seeking, Health Risk Management, Domestic and Self-help Tasks, and Managing Relationships. The named factors provided ILS domain names where participants' scores (between 1 and 5) were collected and calculated per domain and overall.

The reliability statistics refer to this study's actual sample directly. The ILS measure has demonstrated sound structural validity with the final confirmatory factor analysis (Hollingsworth, 2011) modelling resulting in an eight-factor model including 28 items yielding good model fit indices (CMIN = 611.724; CMIN/df = 1.871 [excellent]; SRMR = 0.079 [excellent], RMSEA = 0.079 [acceptable], and item estimates CRs for all factors > 0.70 [range 0.770 – 847; good]). The ILS measure also demonstrated good hypotheses testing for construct validity, with more than 75 % of a priori hypotheses being accepted. The ILS measure also demonstrated good internal consistency with an overall Cronbach's alpha of 0.91 and the Cronbach's alphas for the eight subscales ranging between 0.740 and 0.839.

2.3.1.1. The self-determination measure (IV). As part of the wider NTL data collection, participants completed the AIR self-determination measure (Wolman et al., 1994), a 24-item, 5-point scale questionnaire and an independently validated standardised outcome measure. The AIR self-determination measure identified goals, areas of strength, and areas requiring development. The measure captures participants' knowledge and perceptions about supporting their self-determination. Each participant completed the self-report measure alongside their ILS

measure, where a score out of 120 was calculated. For the study sample, scores ranged between 46 and 120.

2.3.1.2. Administrative data. Administrative data is utilised and accessed via the Department of Communities (DoC). Some of the data for variables used in this study were extracted from Child Protection Services records held by the DoC. Out of the eight independent variables, a total of five variables were sourced from the administrative data. Variables are described in section 2.4.

2.4. Statistical analysis

2.4.0.1. Dependent and Independent study variables

This paper explored variables relating to participants' care experience and demographic factors in relation to their ILS measure scores. This study also considered how the dependent variables, or DVs (ILS domain and overall scores), are associated with participants' care experience and personal demographic characteristics (the independent variables [IVs]).

Care experience was operationalised via the following four IVs: 1) 'Care status' was a dichotomous variable, which was determined at the point of interview and ILS measure completion but also cross-referenced by DoC data; 2) 'Longest placement type' was a dichotomous variable derived using DoC data, and coded as a family-based care setting (foster care and kinship care) and a non-family based care setting (residential, independent living, unendorsed and other settings); 3) 'Stability score' was a derived (continuous) variable based on the following formula (Number of placements/[Total duration in care/1000]) adopted by the Pathways of Care Longitudinal Study (Cashmore & Wulczyn, 2024); and 4) 'ELCS' was a dichotomous variable coded as 'Yes' or 'No', about taking part in the TIA and/or Home Stretch trials based on data provided by DoC and participant self-reporting.

Personal demographic characteristics incorporated four IVs: 1) 'Gender' was a dichotomous variable of 'Female' or 'Male', collected via administrative data (DoC); 2) 'Aboriginal and Torres Straits Islander status', a dichotomous variable of 'Yes' or 'No', which was self-reported at the time of data collection; any incomplete data fields were resolved via administrative data (DoC); 3) 'Location/Regionality', an ordinal variable derived using participants' postal codes at the point of data collection. Incomplete data fields were resolved via data relating to the participants' caseworker district office location. Data fields were categorised using the Australian Statistical Geography Standard (ASGS) classification system as an indicator for access to resources: RA1: Major Cities of Australia; RA2: Inner Regional Australia and RA3: Outer Regional Australia, which we have combined due to the distribution of the population across the categories; and RA4: Remote and Very Remote Australia; and 4) 'Self-determination score', a continuous variable of overall AIR Self-Determination Scale scores (max. = 120).

The NTL research team collected, stored, and managed Wave 1 data in REDCap, a browser-based metadata software (Harris et al., 2009). The de-identified data was imported into IBM SPSS Statistics (IBM, 2020) for analysis. All assumptions have been met for each statistical test used for the analysis. The analysis is described below.

RQ1 analysis: The Kolmogorov-Smirnov test (of Normality) (K-S) was conducted to assess if the in-care ($n = 49$) and left-care ($n = 73$) cohort data were normally distributed, providing preliminary statistics. The K-S tests were significant across all domains for the combined population, and both the in-care and left-care groups, respectively, and distribution was not considered normal. Independent-sample t -tests were conducted to determine between-group differences in normally distributed DVs (ILS overall and domain scores), and the Mann-Whitney U test was conducted to test between-group differences in DVs, that were not normally distributed (Nahm, 2016). Means, standard deviations, medians and interquartile ranges were also calculated. Cohen's d was calculated to measure the magnitude of the difference between the means of the in-care and left-care groups. Effect sizes are categorised according to Cohen's convention of small (0.2), medium (0.5) or large effect (≥ 0.8) sizes (Cohen, 1988).

RQ2 analysis: A backward linear regression analysis technique was adopted to examine which IVs (care experience and personal characteristic factors) are associated with each of the nine DVs (overall ILS score and eight ILS domain scores). IVs were removed as part of a backward stepwise process, where IVs with the largest p -value (least significant) were eliminated one at a time until a final regression model was achieved. The backward elimination process stops when the final remaining variables best explain the DV. A final reduced model is then created, including overall model significance ($p \leq 0.05$); model fit statistics F and R^2 (0–0.25 shows little to no variance explained, 0.25–0.5 shows a small amount of variance explained, 0.5–0.75 shows a good amount of variance explained, and 0.75–1 shows a large amount of variance explained); and correlation coefficient B statistics, which represent increases in DV per IV.

RQ3 analysis: Exploratory multivariate moderator analyses were conducted for DVs with two or more statistically significant IVs ($p \leq 0.05$) that were identified when addressing RQ2. Interaction effects for significant IVs were entered into the final model from RQ2 to identify moderating factors for relevant DVs. Moderators were confirmed when interaction effects were statistically significant ($p \leq 0.05$).

3. Results

3.1. RQ1: How do the young people in care and those who have left care compare in terms of overall ILS scores and scores for eight ILS domains?

Overall mean scores in the left-care group ($M = 114.84 \pm SD = 13.03$) were higher than the in-care group ($M = 109.37 \pm SD = 15.87$). The K-S test for the overall ILS scores indicated that data for both groups were normally distributed ($p = 0.200$). The independent-sample t -test

found that the mean overall ILS scores for the left-care group were significantly higher than the in-care group ($t(120) = -2.096, p = 0.038$), where a medium effect size was detected ($d = 0.38$).

Median scores for all domains, except for the Health Risk Management domain, were higher in the left-care group. The non-parametric Mann-Whitney U test ($M-W$) was run to examine differences in domain scores between the in-care and left-care groups. Significant differences between the groups were detected for the Financial Management ($p = 0.018$), Knowledge of Accessing Available Supports ($p = 0.009$) and Managing Housing ($p = 0.004$) domains. We conclude that the remaining five domains have no difference between the two groups. A small effect size ($d = -0.01 - -0.26$), favouring the left-care group, was found for all ILS domain scores. Full results are presented in Table 2.

3.2. RQ2: What factors influence the development of ILS, overall and across eight ILS domains?

As an exploratory approach, the backward stepwise linear regression method identified significant predictors (IVs) of each of the DVs. Full results are presented in Table 3. The following describes IV effect on DVs within the final linear regression models.

Overall, ILS scores were positively predicted by care status and self-determination scores ($F = 15.952, p \leq 0.001, R^2 = 0.215$). On average, the difference between the in-care and left-care groups in the Overall ILS score is 8.835 unit, holding other factors constant. Financial Management domain scores were positively predicted by care status, longest placement type, and self-determination scores ($F = 3.904, p = 0.011, R^2 = 0.100$). Knowledge of Accessing Available Support domain scores was positively predicted by care status, and Aboriginal and Torres Strait Islander status ($F = 5.478, p = 0.005, R^2 = 0.093$). On average, the difference between young people who self-identified as Aboriginal and Torres Strait Islander and those who did not in the Knowledge of Accessing Available Support domain score is -1.423 unit, holding other factors constant. Managing Housing domain scores were positively predicted by care status, and self-determination scores ($F = 7.466, p \leq 0.001, R^2 = 0.122$). Education Planning domain scores were positively predicted by care status, Aboriginal and Torres Strait Islander status, and self-determination scores ($F = 5.508, p = 0.001, R^2 = 0.135$). On average, the difference between the in-care and left-care groups in the Education Planning domain score is 0.581 unit, holding other factors constant. Job Seeking domain scores were positively predicted by care status, and self-determination scores ($F = 11.310, p \leq 0.001, R^2 = 0.175$). Health Risk Management domain scores were positively predicted by regionality, and self-determination scores ($F = 6.536, p = 0.002, R^2 = 0.109$). Domestic and Self-help Task domain scores were positively predicted by regionality, and self-determination scores ($F = 14.828, p \leq 0.001, R^2 = 0.217$). On average, when young people lived in a Major City of Australia the Domestic and Self-help Tasks domain score is -0.717 unit, holding other factors constant. Managing Relationships domain scores were positively predicted by self-determination scores only ($F = 36.782, p \leq 0.001, R^2 = 0.254$), where the strongest R^2 indicated 25.4 % of the DV can be explained by the IV. Overall the DV models can be interpreted as showing small to no variance (ranging between 9.3 % and 25.4 %).

3.3. RQ3: What factors moderate ILS measure scores, overall and across the eight ILS domains?

Moderator analysis was run for three DVs: Overall ILS Scores; Health Risk Management; Domestic and Self-Help Tasks, as each had at least two significant IVs observed following the backwards elimination process. In model 1, the difference between the in-care and left-care groups in the Overall ILS score is 10.478 unit, holding other factors constant. In model 2, when young people lived in a Major City of Australia the Health Risk Management domain score is -2.414 unit, holding other factors constant. In model 3, when young people had a higher self-

Table 2
Median, Interquartile Range, Mean and Standard Deviation per ILS domain scores.

ILS Domain	In-Care (n = 49)		Left-Care (n = 73)		Between-group comparison (N = 122)		
	Med ± IQR	M ± SD	Med ± IQR	M ± SD	M–W	p	d
Financial Management	16 ± 4	15.47 ± 3.16	17 ± 5	16.59 ± 3.3	–2.370	0.018	–0.22
Knowledge and Accessing Available Supports Managing Housing	10 ± 4.5	9.37 ± 4.07	12 ± 3.5	11.14 ± 3.47	–2.611	0.009	–0.24
	13 ± 5.5	12.39 ± 4.20	16 ± 5	14.7 ± 3.75	–2.865	0.004	–0.26
Education Planning	8 ± 1	7.65 ± 1.77	8 ± 2	7.97 ± 1.58	–0.939	0.348	–0.09
Job Seeking	12 ± 2	11.57 ± 2.75	12 ± 3	12.00 ± 2.07	–0.337	0.736	–0.03
Health Risk Management	15 ± 2	13.57 ± 2.56	14 ± 3	13.37 ± 2.06	–1.130	0.259	–0.10
Domestic and Self-help Task	23 ± 5	22.57 ± 2.68	24 ± 5	22.60 ± 2.98	–0.323	0.747	–0.03
Managing Relationships	16 ± 4	16.73 ± 2.67	17 ± 4	16.47 ± 2.94	–0.111	0.912	–0.01

Notes: Med = Median, IQR = Interquartile Range, M = Mean, SD = Standard Deviation, M–W = Mann-Whitney U test, p = p-value, d = Cohen’s d.

Table 3
Final models from the exploratory backward stepwise linear regression per DV.

Model	Dependent Variables	Independent Variables	B	95 % CI		p
				Lower	Upper	
Model 1	Overall ILS Scores	a) Care Status	8.835	3.790	13.880	0<.001*
		b) Self-Determination Score	0.369	0.228	0.510	0<.001
Model 2	Financial Management	a) Care Status	1.281	–0.009	2.572	0.052
		b) Longest Placement Type	1.176	–0.112	2.465	0.073
		c) Self-Determination Score	0.041	0.005	0.077	0.024
Model 3	Knowledge of Accessing Available Supports	a) Care Status	1.909	0.538	3.280	0.007
		b) Aboriginal and Torres Strait Islander Status	–1.423	–2.860	0.014	0.052
Model 4	Managing Housing	a) Care Status	2.828	1.322	4.334	0<.001
		b) Self-Determination Score	0.041	–0.001	0.083	0.058
Model 5	Education Planning	a) Care Status	0.581	–0.008	1.171	0.053
		b) Aboriginal and Torres Strait Islander Status	0.517	–0.084	1.119	0.091
		c) Self-Determination Score	0.030	0.014	0.047	0<.001
Model 6	Job Seeking	a) Care Status	0.723	–0.131	1.577	0.096
		b) Self-Determination Score	0.057	0.033	0.081	0<.001
Model 7	Health Risk Management	a) Regionality	–0.527	–0.999	–0.0555	0.029
		b) Self-Determination Score	0.036	0.012	0.060	0.003
Model 8	Domestic and Self-help Task	a) Regionality	–0.717	–1.219	–0.215	0.006
		b) Self-Determination Score	0.062	0.036	0.087	0<.001
Model 9	Managing Relationships	a) Self-Determination Score	0.082	0.055	0.109	0<.001

Notes: B = Unstandardized Coefficients, CI = Confidence Interval (Lower and Upper Bound), p = p-value.

determination score, the Domestic and Self-help Tasks domain score was 0.036 units, on average, when other factors were constant. Interaction effects were computed for each model, but none were significant, indicating no moderating effects were present among the factors analysed. Full results are presented in [Table 4](#).

4. Discussion

Given that care-experienced young people are a heterogeneous group ([Donkoh et al., 2006](#)), we explored the intersection of different care experiences and personal characteristics to understand what factors impact the acquisition of ILS for young people during their transitions to adulthood, from OOHC. To achieve this, ILS measure scores of young people with an in-care status were compared against those with a left-

Table 4
Multivariate moderator analysis.

	Dependent Variables	Independent Variables	B	95 % CI		p
				Lower	Upper	
Model 1	Overall ILS Scores	Intercept (constant)	65.091	21.444	108.737	0.004**
		a) Care Status	10.478	-15.294	36.249	0.422
		b) Self-Determination Score	0.401	-0.071	0.872	0.095
		c) Interaction	-0.028	-0.313	0.257	0.846
Model 2	Health Risk Management	Intercept (constant)	14.216	10.087	18.345	0<.001***
		a) Regionality	-2.414	-4.683	-0.146	0.037*
		b) Self-Determination Score	0.001	-0.045	0.047	0.967
		c) Interaction	0.021	-0.004	0.046	0.094
Model 3	Domestic and Self-help Task	Intercept (constant)	20.761	16.345	25.177	0<.001***
		a) Regionality	-2.183	-4.609	0.243	0.003**
		b) Self-Determination Score	0.036	-0.013	0.086	0<.001***
		c) Interaction	0.016	-0.011	0.043	0.234

Notes: B = Unstandardised regression estimate, CI = Confidence Interval (Lower and Upper Bound), p = p-value (*p ≤ 0.05; **p ≤ 0.01; ***p ≤ 0.001), Intercept = "constant".

care status.

4.1. ILS development by care status (RQ1)

The in-care and left-care groups' overall scores highlight that ILS acquisition is equally important at both time points, emphasising that the transition time should be treated as a process. Extended care as an approach for maintaining important relationships can provide opportunities to continue to develop ILS through the transitional stage.

The Financial Management, Knowledge of Accessing Available Supports, and Managing Housing domains were less comparable ($p \leq 0.05$) when considering the distribution of scores. These ILS domains would generally require greater attention after aging out of OOH based on additional responsibilities in early adulthood.

The only ILS domains that showed a higher score for the in-care group were the Health Risk Management and Managing Relationships domains, which could raise questions about young people's health needs not being met following leaving care. Young people may score better in this ILS domain while still in care as they receive additional support from carers and the Department.

Positive relationships foster learning healthy habits across various ILS domains and are significant across the transitional time for both in-care and left-care cohorts. It is, therefore, essential to avoid ending various relationships once young people have left OOH, thus reducing the sense of having to 'go at it alone' (Refaeli, 2017; Sulimani-Aidan, 2017).

Accessing and maintaining stable and secure accommodation is a key component of ILS acquisition and success (Mendes et al., 2023), providing a foundation to build upon in other aspects of life and can mean a greater likelihood of success in the transition to adulthood and independent living (Gibson, 2009). Care leavers need support to develop ILS (Stubbs et al., 2023), which could be via their own friends and family relationships or existing and new professional relationships, where there can be opportunities for greater focus on developing ILS. For example, with money and finances, Zeira et al. (2022) found economic self-sufficiency outcomes were enhanced by 'human capital'.

4.2. Care experience and personal characteristic factors (DV) that influence ILS development (RQ2)

The NTL ILS measure captured young people's responses at a moment in time, providing a perspective about what ILS participants were more confident with. A systematic review considered the ILS domains across international longitudinal studies (Starr et al., 2024). A key finding was that young people's individual circumstances and contexts

are diverse, such as different cultural backgrounds, meaning ILS programs and approaches need to be flexible to meet young people's different needs.

4.2.1. Aboriginal and Torres Strait Islander status

Considering correlations between Aboriginal and Torres Strait Islander status and ILS measure outcomes, this study's findings contradict previous research, where it was widely reported that Indigenous children and young people contend with even more adverse outcomes developmentally (Australian Early Development Census, 2015), especially concerning Aboriginal and Torres Strait Islander young people in OOH (Mendes et al., 2021). Given that 32.8 % of the sample identified as Aboriginal and Torres Strait Islander, it is a surprise that this factor did not significantly impact ILS scores.

4.2.1.1. Location and Regionality. Location/Regionality was a significant factor for the Health Risk Management ILS domain, indicating the importance of access to health provisions and services; for example, the more rural or remote a young person is, the less access they may have. The importance of location and regionality underscores the need to consider inequalities in accessing services that can impact care-experienced young people's trajectories across different ILS domains (Mendes et al., 2023).

4.3. Self-determination and ILS acquisition

The self-determination scores, as an IV, stood out across most domains ($n = 7$) as a significant predictor of greater ILS scores (RQ2). Participants' ILS measure scores may reflect their self-determination bidirectionally. Following this logic, if young people have greater self-determination, they may be more intrinsically motivated across ILS domains, increasing their ILS measure scores. Conversely, if young people have greater confidence in their ILS, they may experience greater self-determination.

The only IV that positively predicted greater scores in the Education Planning and Job Seeking ILS domains was self-determination scores, which intuitively makes sense since both ILS domains are aspirational and future-focused. Access to post-school education and training has been linked to increased employment and improved life satisfaction outcomes (Refaeli et al., 2019), offering an opportunity to be upwardly socially mobile following OOH. Formal and informal education help care leavers achieve personal and professional growth (Groinig & Sting, 2019; Hollingworth, 2011). Similarly, having a job enhances financial freedom and autonomy and enables care leavers to cover expenses such as rent, food, and utilities. Moreover, employment may provide a sense

of belonging, purpose, and structure, which is crucial while transitioning from OOHC to adulthood (Harrison et al., 2022).

ILS are significant in relation to health for young people in OOHC (Muir et al., 2019; O'Donnell et al., 2020), and self-determination may highlight that choice and control are important when it comes to managing one's own health needs and everyday functioning. Accessing healthcare support services, including mental health support and learning personal self-care, are vital ILS (O'Donnell et al., 2016).

4.4. IVs with no effect on DVs

Overall, the findings highlight four IVs did not significantly influence greater ILS scores: 1) The *longest placement type* did not predict ILS scores. This is despite the fact that nearly two-thirds (64.8 %) of the sample experienced living in a family care setting, such as foster or kinship care, as their longest placement type; 2) *Placement stability*, the number of times young people moved while still in OOHC (which ranged from 1 to 51 times) was not significant for this cohort, even though almost half of this study's sample (48 %) entered OOHC at the age of five years or younger. This may indicate earlier adaptation to OOHC, longer-lasting relationships, and more opportunities for ILS acquisition (UK Government, 2016); 3) *Gender* was not a significant predictor even though more than half (57.4 %) of the sample were female. Berejena and Lombard (2016) highlight that females believed their transition from OOHC was more difficult than their male peers. Conversely, Hasson et al. (2015) found that young women transitioned to 'independence' faster than young men. Mixed findings for gender as a predictor for developing ILS persist; and 4) Whether participants took part in enhanced leaving care services (ELCS) (the TIA trial and/or Home Stretch), where nearly 20 % of participants from the left-care group had taken part in ELCS. We expected greater ILS scores for these young people. The programmes may have been too short in duration to have an impact on ILS acquisition.

5. Limitations of study

Higher ILS scores do not guarantee success in early adulthood, and given the exploratory nature of this study and using data from only one Wave (of a possible five), changes were not observed over time. This study's findings may have been influenced by sample size; a larger sample size could have provided an opportunity to test more factors that impact ILS measure scores.

Various external, environmental factors and individual, internal, psychological responses impact adjustment to life beyond OOHC. It is important to note that some of the statements within the ILS measure may implicitly reflect a conception of ILS from a Western perspective, possibly demonstrating Indigenous bias.

Some of the variables used in this study were dichotomous. Variables that capture the subtleties and nuance may provide deeper understanding and analysis (Lipsey, 1990) of ILS acquisition; for example, considering the strength of care experiences, such as the strength of young person and carer bonds, may enhance understanding relating to the power of relational capital and its impacts on acquiring ILS. Further exploration of the significance of accessing extended care beyond age 18 could build greater evidence of associations between continued care and acquiring ILS.

6. Implications for research, policy and practice

A longitudinal approach, capturing repeated measures of ILS at different time points, would provide a deeper understanding of participants' trajectories of developing ILS over time. Moreover, comparing ILS scores at each wave could emphasise adopting a life-course perspective to conceptualise ILS based on personal development (Brannstrom et al., 2017; Fallesen et al., 2014). Various perspectives can support assessing the impact of growing up in OOHC on acquiring ILS,

and future research should include a greater breadth of understanding if, for comparison, ILS measures were completed by significant others (e.g., carers or social workers). Alternatively, a comparison group of young people of similar ages and demographics could enhance our understanding of acquiring ILS for OOHC against non-OOHC young people. Further research should also contribute towards understanding Indigenous critiques of the ILS items and domains as a concept, in line with cultural and community perspectives. This can also generate further understanding of the care experiences of Aboriginal and Torres Strait Islander young people.

The inter-connected relationship between different ILS domains is nuanced and complex, given the diversity of care experiences and individual characteristics. A level of confidence is observed in this study's participants' ILS measure scores. For young people in the transitional time, the reality of the challenges they face may not be realised until later in life. Thus, careful monitoring and review of the ILS measure should take place in practice at different time points to ensure young people's needs are being met accordingly.

Some ILS practices can adopt a short-term approach, for example, using checklists, despite ILS typically being acquired across the lifespan (Furey & Harris-Evans, 2021; O'Donnell et al., 2020). The transition milestone should not be viewed as binary (in OOHC, then out of OOHC) but rather a more gradual flow, which is individualised based on personal functioning, abilities, and environmental context. Findings from this study emphasise the need to develop and implement holistic services and interventions that cut across all ILS domains, regardless of personal care experiences and individual characteristics.

Policymakers should focus on developing initiatives that facilitate the development of critical components of ILS for care leavers. This may be better achieved when all stakeholders adopt a longer-term and life-course lens in acquiring ILS and adopt an interdependency policy, which could guide ILS practice and support care leavers as they navigate life.

7. Conclusion

ILS domains are interlinked (Starr et al., 2024; Sulimani-Aidan, Benbenishty, Dinisman, & Zeira, 2013) and are essential for progressing in early adulthood for all young people who grow up in OOHC. It is also important to note that there is a 'knock-on' effect across ILS domains. Therefore, there is a more apparent need for comprehensive and coordinated support to help care leavers develop the necessary ILS and competencies to manage and cope with the challenges of early adulthood.

Given that this research identified young people still in OOHC and those who left care scored similarly on the ILS measure and that self-determination was a significant factor across ILS domains, the link between personal motivation, autonomy, and ILS acquisition is illuminated. Support networks and reliable relationships should be a focus, as interdependence can facilitate the acquisition of ILS and greater independence.

CRediT authorship contribution statement

Michael Starr: Conceptualization, Formal analysis, Investigation, Methodology, Writing – original draft. **Reinie Cordier:** Conceptualization, Formal analysis, Methodology, Supervision, Writing – review & editing. **Eduwin Pakpahan:** Formal analysis, Methodology, Supervision, Writing – review & editing. **Donna Chung:** Conceptualization, Formal analysis, Supervision, Writing – review & editing. **Lauren Parsons:** Conceptualization, Validation, Formal analysis, Investigation, Methodology, Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial

interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The data that has been used is confidential.

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