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Identifying predictors of retention and professional wellbeing of the early childhood education workforce in a time of change

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Abstract

The international agenda for quality improvement in early childhood education and care (ECEC) has driven policies targeting workforce professionalisation. Increased training and accountability have been required, but without commensurate renumeration. Attendant staff turnover and educator stress threaten to undermine the achievement of intended policy goals. In a study of the Australian ECEC workforce, we conducted a national survey. We also longitudinally tracked staff turnover in a stratified sample of ECEC centres in remote, regional and urban locations, each with different populations and economic ecosystems. National survey data (N = 916) showed intended exit (22%) was associated with upgrading qualifications and positive motivations at entry to the workforce while intention to stay was associated with having a career role and personal satisfaction. The small variations in wages or work demands in the sector did not moderate these relationships but supportive workplaces increased intention to stay. In tracked centres (N = 98 staff), annual turnover (37%) was explained by personal (e.g., maternity) and workplace factors, both positive (promotion, removing unsuited staff) and negative (dissatisfaction). Highest turnover was in remote locations (47%). We conclude that long term sustainability should attend to appropriate reward of professionalisation. In the short-term supportive workplace culture is critical in retaining and sustaining educators.

Keywords Early care and education (ECE) · Early childhood education and care (ECEC), workforce · Professionalism · Retention · Turnover · Stress · Wellbeing

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Introduction

High quality early childhood education and care (ECEC) is an investment in children's futures and a growing imperative in developed economies as they face the implications of population ageing, shifting family structures, and changing work dynamics (OECD 2017). Over the past three decades, strong evidence has emerged from neuro- and developmental-science for the developmental effectiveness of providing intellectually stimulating, emotionally supportive and socially engaging learning experiences in the early years of life. ECEC programs have a significant place in such provisions (Shonkoff et al. 2012). Particularly compelling are arguments for the strategic and economic effectiveness of ECEC programs in prevention of developmental problems compared with their educational remediation (Duncan and Magnuson 2013; Heckman and Carneiro 2003; Heckman et al. 2010). Early education programs can achieve disproportionate gains for children living in disadvantage and, when of sufficient quality, are among the most effective interventions to bridge gaps in social equity (Campbell et al. 2014; Duncan and Magnuson 2013; Heckman and Carneiro 2003). Developed economies have responded with significant political impetus to increase access to ECEC programs and improve the quality of their provision (OECD 2017).

A key quality improvement strategy has been *professionalisation* of the workforce. Professionalisation is typically framed in terms of increasing credentials (qualification and ongoing professional development) and accountability (demonstration of meeting regulated or legislated quality standards) (Cumming et al. 2015; Oberhuemer 2015; Roberts-Holmes 2013). Yet these strategies have failed to recognise sustaining the workforce as the central enabling influence on the quality of program delivery. Across the range of employment roles and qualification levels the quality of provision necessitates ongoing participation of educators and sufficient wellbeing of each to afford optimal engagement with children and families. In this study, therefore, we aim to identify factors that support employment stability and educator well-being by examining the contributions of structural conditions (*Wages*), variation in community and organisational characteristics of a centre that affect every day work (*Work*), and supports provided by workplace relationships and management (*Workplace*).

Sustaining labour supply in ECEC

Delivery of an accessible and high quality ECEC program is predicated on the availability of a skilled workforce OECD 2019). In the transition to professionalisation significant tensions emerge in meeting these needs (Grant et al. 2016, 2018). Extended access for families implies higher demands on the number and timing of the hours worked by educators while new curriculum and regulatory standards increase demands on educators to achieve higher levels of qualification and engage in ongoing training. These demands are set against incommensurate supports and remuneration (Bridges et al. 2011; Cumming et al. 2015; Phillips et al. 2016; Roberts-Holmes 2013; Whitebook et al. 2014).

Educators in the ECEC sector, including those with degree qualifications, are the most poorly paid in the education workforce (McDonald et al. 2018; Phillips et al. 2016). Many without a degree qualification live in poverty (Phillips et al. 2016; Whitebook et al. 2014) and are dependent on family or social services to support their basic living needs (McDonald et al. 2018; Phillips et al. 2016). For those seeking to stay in the sector, opportunities for promotion and attendant pay increases are limited as the career structure is relatively flat (Eurofound 2014; Phillips et al. 2016). Less demanding employment opportunities with equivalent levels of remuneration are available in the retail and hospitality sectors (Phillips et al. 2016; Thorpe et al. 2011). The consequence is reflected in high staff turnover with estimated rates, internationally, between 25 and 40% per annum (Totenhagen et al. 2016). These rates are at least double those in the schooling sector (Grant et al. 2019a; Phillips et al. 2016). For educators who stay the effects are more insidiously seen in work-related stress and sub-optimal mental health that inevitably constrains educator performance and counters the goal of optimizing ECEC quality (Bullough et al. 2012; Grant et al. 2016, 2018; Groeneveld et al. 2012; Whitebook et al. 2014).

Supporting program quality in ECEC

Delivery of a high quality ECEC program is predicated on working conditions for educators that not only sustain educator participation but also enable responsive interactions with children and families. Staff turnover and stress are counterproductive for children's learning and emotional well-being. Turnover not only represents the loss of educator skill and experience to the sector but is a disruption to attachment relationships with children and families that inevitably affect child well-being and learning experiences (Cassidy et al. 2011; National Scientific Council on the Developing Child 2015). A concerning finding in extant research is that turnover rates are higher in centres under greatest stress. Grant and colleagues (2019a, b), for example report centres characterised by greater levels of reported chaos have higher staff intent to leave. This is also the case for centres serving families living in disadvantaged areas, where higher rates of child behavioural problems are reported (Allen et al. 2012; Amin et al. 2003; Brawley and Stormont 2014; Stormont and Young-Walker 2017; Tran and Winsler 2011; Wells 2017). Yet, children experiencing chaotic home lives or from circumstances of disadvantaged are most likely to benefit from attendance at a high quality ECEC program (Duncan and Magnuson 2013).

Stress and emotional distress have long been known to affect interaction quality between parent and child with attendant effects on child behaviour and learning that incur human and economic costs (e.g., Bauer et al. 2015; Shen et al. 2016). Similar findings are emerging from ECEC classrooms (Buettner et al. 2016; Cassidy et al. 2016; Castle et al. 2016; Hur et al. 2016; Jeon et al. 2014, 2016; Li Grining et al. 2010; Pakarinen et al. 2010; Roberts et al. 2016). Educator stress and emotional distress have been associated with reduction in classroom emotional and organizational climate (Jeon et al. 2016; Li Grining et al. 2010; Roberts et al. 2016), teacher responsiveness (Buettner et al. 2016; Castle et al. 2016; Roberts et al. 2016) and professional commitment (Buettner et al. 2016). Adverse effects on emotional, behavioural and learning

outcomes have also been reported. Pakarinen and colleagues (2010), in a study of kindergarten teachers, for example, found that teacher stress was associated with decrease in children's learning motivation and moderated the outcomes for children's literacy learning. Similarly, Jeon and colleagues (2014), reported a pathway from teacher depression to reduction in childcare quality and subsequently emergence of child behaviour problems. Such studies make clear that educator wellbeing is inextricably linked to ECEC quality and underscores the imperative to identify strategies to sustain the workforce in both the short- and long-term.

Sustaining and supporting the ECEC workforce

For educators, professionalisation presents opportunity for more positive engagement with their work (Jones et al. 2017; Trodd and Dickerson 2018), but also considerable new demands (Grant et al. 2016, 2018). For policymakers and service providers, professionalisation of the ECEC workforce presents two distinct challenges for delivery of high quality programs. First, in the short-term there is an imperative to identify strategies that can sustain educator's ongoing participation across the turbulence of the professionalisation process. Such strategies should not only focus on workforce supply but take a holistic approach to supporting the well-being of educators such that they can be responsive to the needs of children (Cumming and Wong 2019). Second, in the longer-term there is an imperative to grow a qualified workforce that is enabled to stay in the sector, engage in professional practice and deliver early education programs that are responsive to the needs of communities, families and children.

In this study, therefore, we aim to identify factors that support educator employment stability and holistic well-being (defined by *Wages, Work* and *Workplace*). We present analyses of a large representative cross-sectional cohort of Australian ECEC educators alongside longitudinal auditing of staff turnover in 13 representative centres (98 staff; see Fig. 1). In analyses of the cohort data we examine the association between demographic and professional characteristics and both staff employment intentions (*intention to stay or leave their centre in the next 12 months*) and sense of employment autonomy (*ability to gain alternative employment)*. Recognizing the complexity of the ECEC sector, including local variation in regulations, remuneration, organizational directives, intake communities and workplace ethos, we test the moderating role of structural variation (wages, work hours, employment flexibility), work demands (for profit/not for profit, complexity of families and children utilizing a service) and workplace supports (management, collegiality, morale) on population predictors of retention. Using the longitudinal tracking of staff in our focus centres we assess our predictive model against rates of exit across an 18-month period and examine the reasons precipitating these exits.

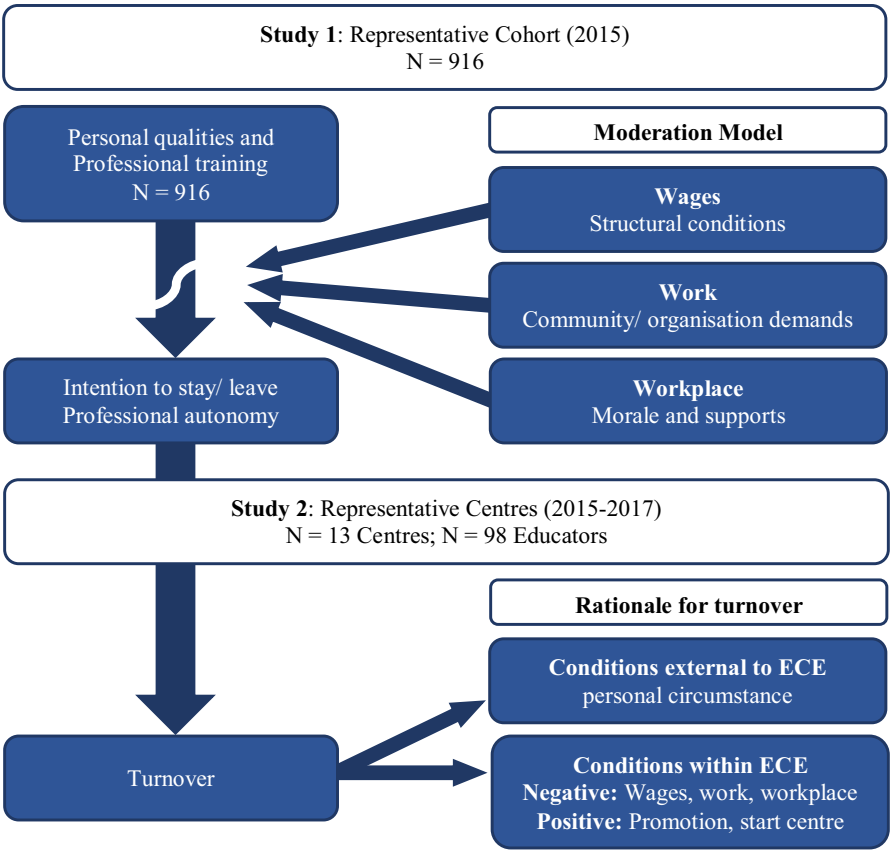

Fig. 1 Research design

Methods

The research studies was conducted in accordance with ethical approval from the University Human Research Ethics Committee at Queensland University of Technology (Approval Number 1500000114). The methods and results for the cross-sectional cohort and longitudinally tracking studies are presented sequentially as Study 1 and Study 2 with integration in the discussion. Data can be made available on request to the corresponding author.

Study 1: National population survey

Method

Sample and procedure

A cross-sectional online survey of Australian ECEC educators was conducted between June 2015 and January 2016. Links to the online survey were disseminated through the national professional organisation (Early Childhood Australia), employing organisations and government agencies (e.g., Australian Children's Education and Care Authority). In total 1255 individuals participated in the survey with 916 completing all questions required for the current analyses (see Table 1). Included participants worked in one of two forms of ECEC program: Daycare centres across operating to cover parent work days and stand-alone Pre-K programs providing for children aged 3–5 years from 9 am until 2.30 pm. Participants excluded due to missing data, compared with those included, had less experience in the ECEC sector ($n = 324$ with 11 ± 8 year; $n = 909$ with 13 ± 9 year, $p < .001$), were more likely minimally qualified (76% vs. 67.2%, $p < .001$) and were less likely to work in a senior teacher or management role (33.4% vs. 49.6%, $p < .001$).

Survey

Respondents were asked to complete an online survey including questions related to demographic and workplace characteristics. Key survey items focused on retention, training and educator professional autonomy and wellbeing. Educator wellbeing, was measured using a modification of the School Organisational Health

Table 1 Cohort characteristics (n = 916)

Characteristic	Mean ± SD or % (*n*)
Gender (female; $n = 913$)	99.2 (906)
Age	40.5 ± 11.0
Work experience	
Centre	5.7 ± 5.3
ECE sector	13.4 ± 8.5
ECE qualification (n = 903)	
Below minimum (none, Cert I or II)	1.6 (14)
Technical qualified (Cert III or IV, Diploma)	65.6 (592)
University qualified (Degree, Masters, Post Grad)	32.9 (297)
Current role	
Not degree qualified -Educational leader, lead educator, assistant educator, relief/casual	50.3 (461)
Early childhood teacher	12.2 (112)
Assistant director, director, service management	37.4 (343)
Culturally or linguistically diverse (yes)	8.3 (76)

Questionnaire (SOHQ; Hart et al. 2000). Modifications were of wording acceptable for the ECEC sector, for example *teache*r was changed to the term *educator* (the term used to designate all those working with children in Australian ECEC) and *students* changed to *children*. To assess representation, key demographic and workplace items replicated those in the Australian *2013 National Early Childhood Education and Care Workforce Census* (The Social Research Centre 2014). The sample was comparable on these indices.

Analytic design

The study employed structural equation modelling to assess the association of key personal and professional characteristics with retention and professional autonomy. Moderating effects of work conditions (*Wages*), demands of work (*Work*) and supports in the workplace (*Workplace*) were then modelled.

Independent variables

Eight independent variables were used in this study: Educator's current role (Management, Teacher, Educator); cultural or linguistic diversity (CALD; yes/no); age; duration of service in both current centre and the ECEC sector and three latent variables: '*Reason for entering the ECEC sector'*, '*Liking and recommending work* i*n the sector'* and '*Intent to further career and qualifications'*. Weighted composite scores were calculated based on their comprising items (scored on a 5-point Likert scale: 'strongly disagree = 1' to 'strongly agree = 5'; and then used as single indicators (Munck 1979) for each respective latent variable.

Dependent variables

Two continuous outcome variables were used to measure different aspects of retention. Variable 1 (*Intention to stay next 12 months*) "Given my current circumstances the likelihood that I will be working in the same centre 12 months from now is" was measured on a 0–100% visual-analogue scale which was changed to a continuous variable with values of 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100. This variable measured potential churn within the workforce. Variable 2 (*Sense of autonomy*) was scored on a 5-point Likert scale ('strongly disagree = 1' to 'strongly agree = 5') and read "I could get another job outside of the ECEC sector if I wanted to (without moving to another location)" (measure of choice). While both aspects of retention did not load together onto a latent variable of retention, they were considered simultaneously.

Moderating variables

Three composite variables were created to capture different forms of complexity that might moderate retention and professional autonomy:

1. *Wages* the structural complexity associated with work conditions, including pay, flexibility of work, certainty of work hours and opportunity for career advancement.
2. *Work* the community complexity of the site in which educators work including whether the service operated for profit and the level of disadvantage, behavioural difficulties, additional educational needs and cultural diversity of the attending population.
3. *Workplace* the inter-personal complexity within the centre, including morale, recognition, opportunity for decision-making, collegial interactions and leadership.

The method for derivation of these indices are presented in Table 2. A median split was used to dichotomise each index into low versus high complexity.

Table 2 Indices of complexity

Wages: structural factors	Scoring (0–6)	
	0	1
Wages	Above award	Minimum award
Paid working hours	Certain	Uncertain
Bonuses	Yes	No
Adequacy of pay for need	Adequate	Inadequate
Flexible work arrangements	Yes	No
Opportunities for career advancement	Yes	No
Work: community/centre characteristics	Scoring (0–3)	
	0	1
Disadvantaged	No	Yes
Behavioural difficulties/Special needs	Low (≤ mean)	High (> mean)
Organisational focus	Not for Profit	For Profit
Workplace: centre work environment*	Scoring (0–5)	
	0	1
Morale	Low (≤ mean)	High (> mean)
Appraisal and recognition,	Low (≤ mean)	High (> mean)
Participative decision-making	Low (≤ mean)	High (> mean)
Professional interaction	Low (≤ mean)	High (> mean)
Supportive leadership	Low (≤ mean)	High (> mean)

*Responses to the modified School Organisational Health Questionnaire (Hart et al. 2000)

Data analysis

Data imputation

Missing values across the remaining variables were predicted using Expectation Maximisation (EM) imputation in SPSS Version 21..0 using the full dataset. This ensured a complete dataset for 916 participants as recommended by Shin and colleagues (2009).

Structural equation model: Main effects

Structural equation modelling using maximum likelihood estimations was performed in AMOS 23.0. In a preliminary step, the nine independent variables were entered as six measured variables (i.e., respondents' current role was entered as two dummy variables) and three latent variables into a separate model to identify significant correlations. For reasons of parsimony, only significant correlations were fitted in the full model. The full structural model was then fitted to examine paths (i.e., associations) between the nine independent variables and the outcome variables. Model specification for the full structural model included the nine independent variables and their correlations as determined in the previous step, as well as the two outcome variables (entered as measured variables, including all correlations). All paths between independent variables and outcome variables were taken into account. The following fit indices were used to determine model fit: the normed Chi square (χ^2/df), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), and root mean-square error of approximation (RMSEA; Hoyle 1995). Fit was considered acceptable if the following cut-offs were met: χ^2/df values between 1.0 and 2.0, CFI and TLI > .90, RMSEA < .08 (Byrne 2010; Hu and Bentler 1999).

Structural equation model: Multi-group analysis

Next moderating impacts were examined to determine if three indices of complexity (*Wages, Work, Workplace*) changed the relationships between independent variables and retention of staff. Three multi-group analyses were conducted in AMOS to examine differences across groups (i.e., low vs. high structural complexity; low vs. high community complexity; low vs. high personal complexity) in structural regression weights (i.e., paths between independent and outcome variables). Additionally, analyses were run separately to focus on one outcome variable at a time (i.e., six multi-group analyses in total).

Analyses were undertaken in two stages. The first stage of analyses was used to determine if parameters differed for the low versus high complexity groups, the second stage was then used to determine which parameters (i.e., regression weights) varied between the two groups. First, the full structural model presented above was fitted simultaneously (i.e., receiving one set of fit indices) for the low and high complexity groups with all parameters freely estimated (the unconstrained model). Next, the same model was fitted again, this time constraining all paths between independent variables and outcome Variable 1 (or outcome Variable 4) to be equal across

both groups (the constrained model). Since the constrained model is nested within the unconstrained model, both were compared using the χ^2 difference test, as well as the more practical CFI difference test (Byrne 2010; Cheung and Rensvold 2002). A significant change in χ^2 or a change in CFI of greater than .01 (Byrne 2010; Cheung and Rensvold 2002) means that the constrained model is considered a poorer fit to the data than the unconstrained version. This indicates that one or more of the parameters that had been constrained to be equal in fact differed between respondents in the low versus high complexity groups. If this was the case, the second stage of analysis was performed. Each structural regression weight based on the unconstrained model was compared across respondents in the low and high complexity groups, with z-scores (i.e. difference in regression weight comparison) above 1.96 indicating significance. Significance meant that this particular index of complexity can be considered a moderator of the relationship between the independent variable and outcome variable examined.

Results

Main effects

Figure 2 presents the significant associations between independent variables and the two different aspects of retention. Five independent variables were associated with *intention to stay within the same centre for the next 12 months*. Staff who had worked for longer in their particular centre, had a more senior/managerial role compared to the reference group or liked and would recommend work in the ECEC sector compared to others who were more likely to indicate they would remain in the next 12 months. Contrary to expectation, staff members were less likely to indicate they would still be working in the same centre in 12 months' time if they entered the sector for more positive reasons (e.g., they liked working with children and wanted to change people's lives) and if they were currently or intending to further their career and gain additional qualifications. Only one variable was associated with employment autonomy. Recommending work in the ECEC sector to others was positively associated with a *sense of autonomy*.

Moderation effects

Table 3 presents the results of the three multi-group analyses conducted in AMOS to examine group differences between: (1) Wages: low versus high structural complexity; (2) Work: low versus high community complexity; and, (3) Workplace: low versus high personal complexity. There were no differences between the low and high complexity groups across all three levels when examining *sense of autonomy* (staff believe they can get another job outside ECEC). Similarly, no difference was found for *intention to stay within the same centre for the next 12 months* between the low and high Wages and Work complexity groups.

A significant χ^2 difference test indicated a group difference between the low and high Workplace complexity groups such that greater support in the workplace was

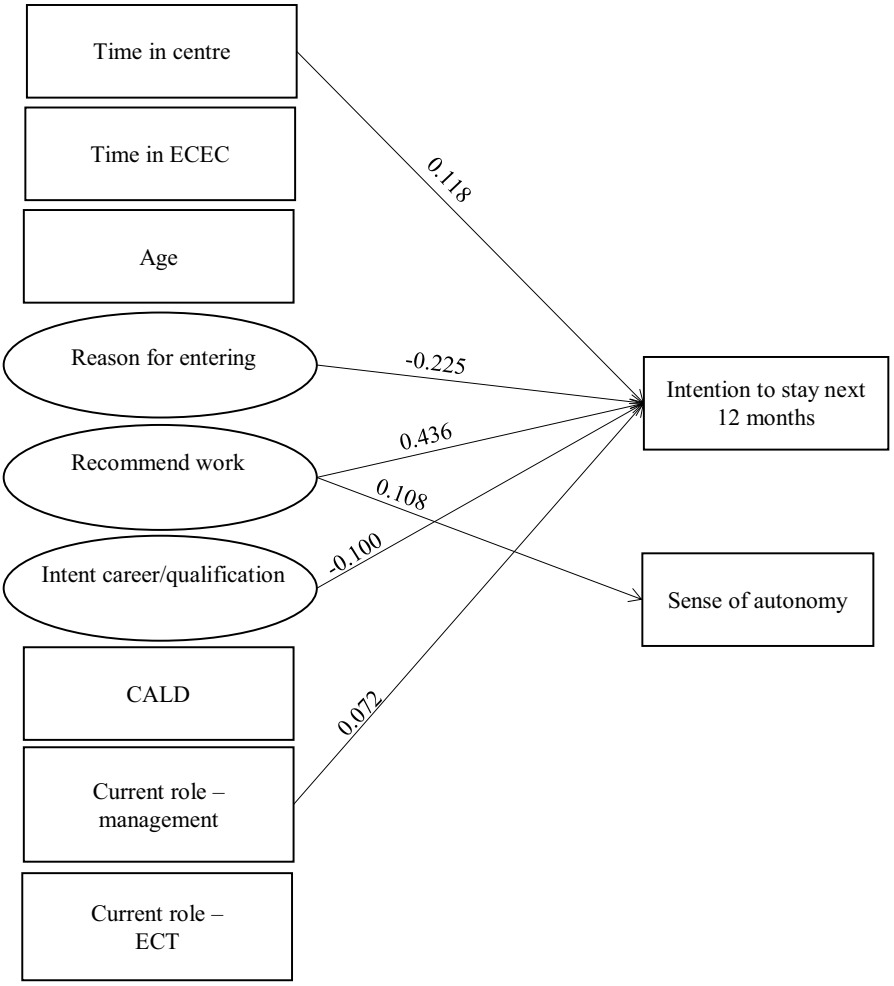

Fig. 2 Simplified path diagram showing significant ($p < .05$) main effects between independent variables and two aspects of retention ($n = 916$). Correlations between independent variables and between outcome variables were included but are not shown for readability. Model fit: $\chi^2/df = 1.64$, CFI = .994, TLI = .978, RMSEA = .026

associated with *intention to stay*. To identify which parameter/s differed between respondents in the low versus high complexity groups, z-scores were subsequently examined (i.e., difference in regression weight comparison). These results are presented in Table 4.

In the group of staff experiencing high levels of personal or relational complexities at work, *intention to stay within the same centre for the next 12 month* was positively associated with the length of time they have worked in that particular centre ($\beta = .187$, $p < .001$), but negatively with the length of time they have worked in the ECEC sector in general ($\beta = -.128$, $p < .001$). These relationships were not

Table 3 Multi-group analysis: model comparison to detect group differences across three levels of complexity (n = 916)

Complexity level	Model	Intention to stay next 12 months					Sense of autonomy				
		DF Δ	χ^2 Δ	*p* value	CFI	CFI Δ	DF Δ	χ^2 Δ	*p* value	CFI	CFI Δ
WAGES	Unconstrained	NA	NA	NA	.997	NA	NA	NA	NA	.997	NA
Structural factors	Constrained	9	11.684	.232	.996	−.001	9	11.374	.251	.996	−.001
WORK	Unconstrained	NA	NA	NA	.998	NA	NA	NA	NA	.998	NA
Organisational/Community complexity	Constrained	9	16.107	.065	.995	−.003	9	5.628	.776	.999	.001
WORKPLACE	Unconstrained	NA	NA	NA	.997	NA	NA	NA	NA	.997	NA
Psychological ethos	Constrained	**9**	**21.544**	**.010**	**.991**	**−.006**	9	5.283	.809	.998	.001

Statistically significant results ($p < 0.05$) are presented as bold

DF = degrees of freedom; Δ = difference between two consecutive models; NA = not applicable

Table 4 Group differences on regression weights between independent variables and intention to stay for the next 12 months

Independent variables	High workplace complexity		Low workplace complexity		Difference
	B	*p*	*B*	*p*	*z*-score
Time worked in centre	**1.311**	**<.001**	.326	.111	−2.442
Time worked in ECE	**−.513**	**.031**	.159	.397	2.212
Age	**.376**	**.024**	**−.279**	**.041**	−3.044
Positive reason for entering	**−6.867**	**<.001**	**−4.915**	**.023**	.709
Recommend work	**12.914**	**<.001**	**13.521**	**<.001**	.162
Intent career/qualification	−1.107	.470	**−3.004**	**.011**	−.979
Culturally/linguistically diverse	.419	.932	−3.886	.361	−.664
Current role—management	**6.800**	**.043**	−2.047	.420	−2.099
Current role—ECT	1.840	.667	−.055	.989	−.329

Statistically significant results ($p < 0.05$) are presented as bold

A difference in parameters (i.e., z-score) greater than 1.96 indicates both workplace complexity groups differ from each other with a p value < .05

significant in the group of staff experiencing low levels of complexity. Compared to the educator reference group, staff with a management position were more likely to indicate *intention to stay in the next 12 months* when they experienced high levels of complexity ($\beta = .096$, $p < .001$). However, again this relationship was not significant in the low workplace complexity group. Finally, older staff were more likely to remain in the same centre over the next 12 months when they reported a high level of personal or relational complexity at their workplace ($\beta = .126$, $p < .001$). However, in the group of staff experiencing low levels of workplace complexity, younger staff was more likely to stay (i.e., older staff was more likely to leave; $\beta = -.130$, $p < .001$).

Study 2: Longitudinal tracking of staff in representative centres

Method

Sample

To achieve a representative sample of Australian ECEC centres, public data sets were employed to undertake stratified selection within a remote (mining town; population 20,000), regional (coastal tourist and military economy; population 200,000) and metropolitan (population 2 million) community. Within each community, centres were selected with reference to the National Quality Standard assessment and Australian Early Development Census (Commonwealth of Australia 2016). AEDC data were used in preference to other social indices as these capture child-level developmental vulnerability at school entry mapped to small local areas and,

therefore, best capture fine-scale variations in community disadvantage that affect child development. Stratification was within high (> 30%) and lower (0–29% vulnerability) vulnerability AEDC areas. ECEC services identified within these geographical areas were approached to participate. Services that declined to participate ($n = 3$) were replaced with like-services selected randomly within the total potential pool. Fifteen centres agreed to participate; five stand-alone Pre-K centres and ten Long Day Care settings. Two centres withdrew after commencement due to personnel crises (director family death and directo diagnosed with cancer); 13 were tracked for 18 months, across 2015–2017. There was a total of 101 staff across the 13 centres. Of these 98 (97%) consented to participate in the data collections. One staff member declined to participate and a further two were absent at the time of the centre visit and did not participate. Table 5 presents summary information on the qualifications and hours of work of each participant

Procedure

The Director of each centre was contacted to discuss the details of the study, including consent mechanisms. A suitable time to visit was arranged. Where centres were part of a larger ECEC organisation, permissions were first sought at organisational level. At initial visits the director provided details of roles, qualification and roles of each staff member. Individual staff members were also interviewed at the inception visit to provide information on their path into ECEC, their current work and work satisfaction and their ongoing career aims. Detailed

Table 5 Qualifications and work participation of staff (n = 98)

	n	%
Qualifications		
Post-graduate degree	2	2
Bachelor degree	14	14
Diploma/advance diploma	25	26
Certificate III	39	40
Other	18	18
Current study	27	28
Post-graduate degree-education	1	1
Postgraduate degree-other	1	1
Bachelor degree-early childhood education	5	5
Bachelor degree-other education	1	1
Bachelor degree-not education	4	4
Diploma/advance diploma	8	8
Certificate III-early education	6	6
Certificate III-other	1	1
Employment type		
Permanent full-time (32–40 h per week)	43	44
Permanent part-time (24–32 h per week)	48	49
Casual (15–24 h per week)	7	7

qualitative analyses of these interviews are reported elsewhere. Follow-up attacking of staff retention and change of role or employment was made through phone contacts to the centre director. Analysis reported here focused on these follow-up data.

Analysis

Reasons for leaving were categorised into factors external to ECEC (e.g., leaving due to family circumstances) and those relating to ECEC including both positive (promotion to another centre/started own centre, unsuitable and managed out) and negative (e.g., left sector or centre due to dissatisfaction or preferred alternative) reasons for exit. Structural movement within a centre, notably promotion within a centre, was also coded.

Results

As shown in Table 6, the total annual turnover rate was 37% per annum calculated from data collected across the 18-month period. Of these exits most (73%) were of educators leaving the ECE sector. A significantly higher rate of exit was evidenced in remote areas. Turnover rates for the total sample exceeded the turnover intention rates of 22%, reported in the national survey.

Figure 3 summarises the reasons provided for exits by the directors of the tracked centres. Of the total exits 13% were defined as positive and included both purposeful removal of those identified as unsuitable by management (9%) and promotion to a higher level of responsibility at another centre (4%). A majority of exits (87%) were identified as negative loss to the centre and included leaving for family circumstances (moving for a partner's work was most common followed by pregnancy; 38%) and dissatisfaction with work conditions (including short notice termination of contract without explanation and moving to alternative low paid occupations; 49%). Those moving to alternative employment sectors included those moving to the school sector and other professions (e.g., nursing). Some did not indicate their onward employment but indicated dissatisfaction with their work. Among those staying 4% ($n = 2$) were promoted within their centre.

Table 6 Staff turnover rates (2015–2017) by location and for the total sample of centres

Location	Staff in centre Jan 2015 N (%)	Staff remaining July 2017 N (%)	Left ECE centre N (% of exits)	Left ECE Sector N (% of exits)	Turnover per annum (%)
Remote	40	16 (40%)	2 (8%)	22 (92%)	45.0
Regional	29	16 (55%)	4 (34%)	9 (66%)	33.8
Metro	29	19 (66%)	4 (40%)	6 (60%)	33.0
All	98	51 (52%)	10 (27%)	27 (73%)	37.0

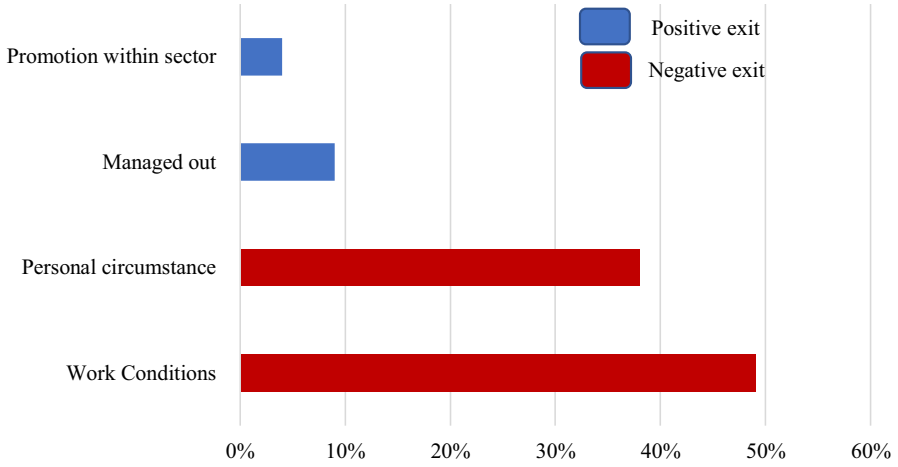

Fig. 3 Reasons for exits from study centres ($N = 47/98$ staff members)

Discussion

Across developed economies, staff turnover and stress present considerable threat to policy aspirations for improved ECEC quality, achievement of optimal child outcomes, and delivery of human capital and social equity to benefit society (Whitebook et al. 2014; OECD 2019). The quality improvement agenda for ECEC has placed significant pressures on the workforce to professionalise through increased training and accountability (Grant et al. 2016, 2018) but without commensurate supports or recognition in improved work conditions or pay (Phillips et al. 2016). Recognising that professionalisation is a process of transition, our first aim in this study was to identify factors that can sustain educator retention and well-being during the disruptions of transition. By examining the moderating effect of current variations in work conditions (*Wages*), work demands (*Work*) and workplace environment (*Workplace*) on population predictors of retention and autonomy we sought to identify targets for immediate intervention. We examined population predictors of two key outcomes, retention (intent to stay in next 12 months) and employment autonomy (employment is a choice) and examined the moderating effect of variations in *Wages, Work* and *Workplace*. Focussing on the long-term need to grow and sustain a professional ECEC workforce (OECD 2019) our second aim was to examine actualised staff turnover and career progression across an 18-month period beyond our population study, tracking staff in representative centres within remote, regional and metropolitan locations. Reasons for exit and career progress of those who stayed were tracked longitudinally and compared against the predicted turnover and explanatory factors modelled in the population cohort.

While the 12-month turnover intention rate in the national survey was 22% the actualised turnover in the longitudinally tracked centres was 37% per annum. In part, this discrepancy is explained by difference in sampling between our population cohort and longitudinally tracked centres. The stratified selection

of centres by geographical location in the longitudinal study over-represented remote and regional centres compared with the representative Australian ECEC workforce. In the remote sample there was both higher numbers of staff in each centre and higher rates of turnover. These characteristics were not anticipated but reflect high demand for childcare provision, alternative employment opportunities and greater mobility of families in the context of the remote mining economy from which we sampled. The metropolitan sample, however, provides a more stringent comparator and identifies an annual turnover rate of 33%, 11% higher than the anticipated 22% intention identified in the population survey. Figures of a turnover of one in three educators align with other international reports (OECD 2019; Grant et al. 2019a, b; Totenhagen et al. 2016)

Our examination of predictors, moderators and explanations for turnover in our combined studies presented two challenging questions but also some guidance for retention and support strategies.

Staff turnover: Are the best leaving?

Intention to leave a centre was associated with current engagement in formal training. Those undertaking higher level qualification, including those undertaking university degrees, were more likely to express intent to leave in the next 12 months. The finding may reflect 'qualifying out'; that is undertaking higher level qualifications to leave current ECEC employment. Qualifying out was seen through a promotional move to another ECEC centre in 4% of the longitudinally tracked sample, a pattern also reported in recent USA study (Grant et al. 2019b). More typical in our sample, however, were moves out of the ECEC sector. For degree qualified the favoured destination was the school sector where wages and conditions are more favourable. Prior studies have documented the preference of degree qualified educators to work in the school sector in Australia (Thorpe et al. 2011) and elsewhere (Phillips et al. 2016). Others have identified that the limited opportunity for career progression in ECEC can direct career-orientated individuals away from the ECEC sector (Eurofound 2014; Phillips et al. 2016). Our finding that those who were employed in managerial roles were more likely to stay in ECEC is consistent with this argument. Management roles afford opportunity for improved pay, security, autonomy and career status when compared with direct teaching roles in ECEC. Data from the longitudinally tracked sample align with this explanation. Consistent with the modelling of the cohort data, educators who stayed in ECEC were most commonly those who had achieved career progression into managerial roles. Such preferencing of managerial roles presents a further challenge for quality of provision. The limited opportunity for increased wages in a contact teaching role directs the highest qualified to managerial roles and, typically, away from work with children where they have immediate impact on interactional quality. Our combined findings suggest that career-orientated staff in the ECEC sector move up or move out.

Staff turnover: Are motivated staff disillusioned?

A second key finding emerging from our analyses was that those who commenced ECEC with more intrinsic motivations (liking children and wanting to make a difference in their lives), were also more likely to intend to leave. To our knowledge a finding of negative association has not been previously reported in the literature. The prior studies of Wells (2017), and Torquati et al. (2007), both based on samples of ECEC teachers in the USA, report an association in which a positive motivation to teach in ECEC was associated with retention. Our contrary finding, across a broader diversity of the ECEC workforce, possibly reflects unmet expectation (Noble and MacFarlane 2005) but more likely arises from a complexity of extrinsic factors that co-occur with high intrinsic motivation to work with children. One explanation is that highly motivated educators are seeking alternative places of employment within the sector. A paper fom the USA suggests that intrinsically motivated educators are more likely to move within the sector than leave entirely (Grant et al. 2019b). Prior studies have documented significant 'churn' in the sector as individuals move between centres seeking small increases in pay or improvements in working conditions or career opportunity (Phillips et al. 2016). Our longitudinal data suggest at least a small proportion (4%) of educators moved for promotion or to start their own centre. However, our evidence suggests that there is also 'churn' within the sector in which educators move to the same role in a different centre seeking marginal improvement in conditions. In this respect, our finding that younger staff are less likely to stay in more complex communities presents a concern. While older and more qualified staff are more likely to stay in these communities, attrition over time presents a significant problem if there is not equivalent renewal.

A second explanation relates to changing life-course priorities. The ECEC workforce is highly feminised (OECD 2019). The Australian ECEC workforce comprises 97% women (Early Learning: Everyone Benefits 2019). Hence, a proportion of turnover will be attributable to life circumstance including the birth of children, child and family care responsibilities and disruptions associated with spouse employment. Our longitudinal data indicates that almost 40% of exits related to personal circumstances, most commonly pregnancy and spouse career. Work conditions also weigh in with about half of exits attributed to this factor. For unpartnered educators working in ECEC, considerable financial stress limited personal autonomy (e.g., leaving home, dependence on a former spouse) while for partnered educators, spousal income supplements living costs (McDonald et al. 2018; Irvine et al. 2016; Phillips et al. 2016). Against a background of low pay and limited career opportunity within ECEC, less stressful work, such a retail or hospitality work, present positive alternatives (Thorpe et al. 2011). Against a background of poor pay and conditions, for those partnered, a higher spouse income is almost certainly a driver determining family division of labour, location of residence and moves associated with career opportunity.

Collectively our findings suggest that the converging effects of changing life course priorities and ongoing life circumstances, weighed against poor remuneration, serve as a catalyst for exit from employment in ECEC. Those highly motivated to care for children and to make a difference in the lives of children quite possibly

direct attention to the care of their own children and/or less demanding employment alternatives when they enter the reproductive life-phase. While being disillusioned (Noble and MacFarlane 2005) may be part of the explanation for exit, the dominant theme suggested in our data is one of pragmatic necessity driven by personal need and family economics (McDonald et al. 2018; Irvine et al. 2016).

Staff retention: What makes a difference?

Contrary to our expectation, analyses of the population data did not find that structural work conditions (*Wages*) moderated employment intent. Yet qualitative analyses of interviews with staff in sampled centres (McDonald et al. 2018), and longitudinal tracking of the educators within these centres, identified their work conditions as the single most important factor explaining exits. Two possible explanations for absence of effect in our cohort analysis are evident. First, there may be insufficient variability, or threshold, in wages and work conditions across the population sample. Second, our composite measures may have served to wash out effect given that these may vary across the different employment roles captured in the representative population cohort. In the interview data, individual strategies were identified. Educators named flexibility of work hours and subsidised childcare at their place of employment as key mechanisms supporting their retention (McDonald et al. 2018; Irvine et al. 2016):

That variations in wages and work conditions were insufficient to overcome high turnover suggests that larger structural changes are necessary to stem the loss of educators. In a study conducted in the USA, wage incentive strategies linked to increased qualification have shown some slowing of staff loss from the ECEC sector but with attendant movement ('churn') within the sector (Bridges et al. 2011). Movement within the sector was greater for the most qualified, possibly reflecting improved bargaining power and/or promotion (Bridges et al. 2011). Nevertheless, both in Australia and internationally, movement out of the sector to the more favourable conditions of the school sector or other work remains a problem (Phillips et al. 2016). Unless degree qualified educators have structural parity with the primary schooling sector attracting new entrants and averting 'qualifying out' will remain difficult (OECD 2019). For less qualified ECEC staff the increased demands for credentials and accountability suggests the need to pay higher salaries to compete with less demanding and more flexible low-income work (Thorpe et al. 2011; Phillips et al. 2016). In the Australian context, however, changes in wages are unlikely in the near future. The *National Early Years Workforce Strategy* (2012–2016) specifically excluded wage increases noting that wage incentives are "a matter for negotiation between employers and employees" (Standing Council on School Education and Early Childhood 2012, p. 4) while more recent legal challenges to improve the pay and conditions of ECEC staff through the Fair Work Commission in Australia (United Voice 2018) has failed to achieve increased remuneration.

In the context of low wages and work conditions, work satisfaction matters (Grant et al. 2019b). Attention is therefore directed to the organisational and community demands of individual centres (*Work*) and the ethos within (*Workplace*). Our

analyses did not identify a moderation effect of work demand (*Work*). A somewhat interesting finding, and one that contrasts with previous studies (Tran and Winsler 2011; Allen et al. 2012; Amin et al. 2003), was a trend suggesting greater commitment to stay among older and more qualified staff working in socially complex communities. Our finding may reflect supports and commitment of educators working within these contexts or limited employment autonomy. Examination of the demographic characteristics of those working in these complex communities indicate that a higher proportion of educators were from culturally and linguistically diverse groups. Whether commitment to community or lack of alternative employment explains retention is not clear. Further and more detailed understanding of the factors associated with this interesting absence of variation is warranted and may inform intervention in areas where the quality of ECEC is most critical in achieving educational equity (Campbell et al. 2014; Duncan and Magnuson 2013; Heckman and Carneiro 2003). Data from the focussed longitudinal study did not shed further light on the population finding as the variations in sampling confound geography, culture and population movement.

Workplace ethos and supports (*Workplace*) emerged as an immediate and critical factor predicting intent to stay. Consistent with other recent studies (Grant et al. 2019a, b), psychological aspects of the work environment emerge as important. Our data indicate that levels of staff morale, recognition, participative decision making, professional interaction and supportive leadership coalesce as a tipping point that can either drain or sustain a workforce experiencing considerable employment adversity. Although intrinsic motivations of working with children and contributing to social good are insufficient to maintain ongoing engagement, the impact of productive relationships with work colleagues and effective leadership against that background was powerful. Longitudinally, work conditions were identified as reasons for exit but our data suggest workplace ethos was pivotal in sustaining those who stay.

Employment autonomy: Willing or stuck?

Only one population predictor of employment autonomy was identified, 'liking and recommending work in ECEC'. This finding is not unexpected but reiterates the high intrinsic motivation for those committed to stay in the ECEC sector. What is interesting, however, is that employment autonomy was not associated with any demographic or professional characteristics at population level. For example, neither those with longer tenure in the sector, nor those who entered the sector with high motivations, were necessarily those who remained in their centre by choice. The results speak to the high complexity of factors that keep educators in the ECEC sector and reflect the great diversity of employee personal and professional characteristics compared with the homogenously degree-qualified educators in the school sector. Employment autonomy was not moderated by work conditions, work demands or workplace environment, again speaking to the complexity of the intrinsic motivations and factors outside the employment setting that affect entry and exit from a low paid, highly feminized employment sector.

Conclusions

Internationally, improving the quality of ECEC programs remains high on the political agenda as a means to promote positive child development, build human capital and achieve social equity. The ECEC workforce is front and centre in achievement of these goals and continues to face demands for increased qualification and accountability without commensurate renumeration. Against this background, staff turnover (disrupting relationships) and sub-optimal well-being of educators (reducing responsiveness) can threaten quality of provisions.

Our findings, while based on an Australian sample, resonate with the substantial international demand to grow and sustain a professional ECEC workforce (OECD 2019).

To address the international shortage of ECEC educators a key theme is improved career pathways and renumeration commensurate with responsibility (OECD 2019). Yet such a strategy is costly (Bridges et al. 2011) and resisted by policymakers (OECD 2019). More immediately, our data indicate that attention to work conditions and the social and psychological ethos of the workplace is critical to sustain the optimal engagement and well-being of educators while advocacy for appropriate recognition and renumeration continues.

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References

Allen, R., Burgess, S. M., & Mayo, J. (2012). *The teacher labour market, teacher turnover and disadvantaged schools: New evidence for England* (CMPO working paper series No. 12). Bristol: Bristol Institute of Public Affairs, University of Bristol.

Amin, M. R., Zaman, A., & Amin, N. A. (2003). Organizational profile, HR practices and the perceived quality and performance of small businesses: Empirical highlights from the urban child care centres. *International Business and Economics Research Journal, 2*(6), 95–105. https://doi.org/10.19030/iber.v2i6.3813.

Bauer, A., Pawlby, S., Plant, D. T., King, D., Pariante, C. M., & Knapp, M. (2015). Perinatal depression and child development: Exploring the economic consequences from a South London cohort. *Psychological Medicine, 45*(1), 51–61. https://doi.org/10.1010/S0033291714001044.

Brawley, S., & Stormont, M. A. (2014). Investigating reported data practices in early childhood: An exploratory study. *Positive Behaviour Interventions, 16*(2), 102–111. https://doi.org/10.1177/1098300713480838.

Bridges, M., Fuller, B., Huang, D. S., & Hamre, B. K. (2011). Strengthening the early childhood workforce: How wage incentives may boost training and job stability. *Early Education and Development, 22*(6), 1009–1029.

Buettner, C. K., Jeon, L., Hur, E., & Garcia, R. E. (2016). Teachers' social–emotional capacity: Factors associated with teachers' responsiveness and professional commitment. *Early Education and Development, 27*(7), 1018–1039. https://doi.org/10.1080/10409289.2016.1168227.

Bullough, R. V., Hall-Kenyon, K. M., & MacKay, K. L. (2012). Head Start teacher well-being: Implications for policy and practice. *Early Childhood Education Journal, 40*(6), 323–331. https://doi.org/10.1007/s10643-012-0535-8.

Byrne, B. (2010). *Structural equation modelling with AMOS: Basic concepts, applications, and programming*. New York, NY: Routledge.

Campbell, F., Conti, G., Heckman, J. J., Moon, S. H., Pinto, R., Pungello, E., et al. (2014). Early childhood investments substantially boost adult health. *Science, 343*(6178), 1478–1485. https://doi.org/10.1126/science.1248429.

Cassidy, D. J., King, E. K., Wang, Y. C., Lower, J. K., & Kintner-Duffy, V. L. (2016). Teacher work environments are toddler learning environments: Teacher professional well-being, classroom emotional support, and toddlers' emotional expressions and behaviours. *Early Child Development and Care, 187*(11), 1–13. https://doi.org/10.1080/03004430.2016.1180516.

Cassidy, D. J., Lower, J. K., Kintner-Duffy, V. L., Hedge, A. V., & Shim, J. (2011). Preschool classrooms: An analysis of classroom context and teacher, director, and parent perspectives. *Journal of Research in Childhood Education, 25*(1), 1–23. https://doi.org/10.1080/02568543.2011.533118.

Castle, S., Williamson, A. C., Young, E., Stubblefield, J., Laurin, D., & Pearce, N. (2016). Teacher–child interactions in early head start classrooms: Associations with teacher characteristics. *Early Education and Development, 27*(2), 259–274. https://doi.org/10.1080/10409289.2016.1102017.

Cheung, G., & Rensvold, R. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modelling: A Multidisciplinary Journal, 9*(2), 233–255. https://doi.org/10.1207/s15328007sem0902_5.

Commonwealth of Australia (2016). *Australian early development census national report 2015*, ISSN 2206–2831 (Print) ISSN 2206–284X (Online)

Cumming, T., Sumsion, J., & Wong, S. (2015). Rethinking early childhood workforce sustainability in the context of Australia's early childhood education and care reforms. *International Journal of Child Care and Education Policy, 9*(1), 2. https://doi.org/10.1007/s40723-015-0005-z.

Cumming, T., & Wong, S. (2019). Towards a holistic conceptualisation of early childhood educators' work-related well-being. *Contemporary Issues in Early Childhood, 20*(3), 265–281.

Duncan, G. J., & Magnuson, K. (2013). Investing in preschool programs. *The Journal of Economic Perspective: A Journal of the American Economic Association, 27*(2), 109–132. https://doi.org/10.1257/jep.27.2.109.

Early Learning: Everyone Benefits. (2019). *State of early learning in Australia 2019*. Canberra, ACT: Early Childhood Australia.

Eurofound. (2014). *Early childhood education and care: Working conditions and training opportunities* (Eurofound working paper). Dublin: Eurofound. Retrieved from http://ketlib.lib.unipi.gr/xmlui/bitstream/handle/ket/859/EF13101EN.pdf?sequence=2&isAllowed=y.

Grant, A. A., Jeon, L., & Buettner, C. K. (2019a). Chaos and commitment in the early childhood education classroom: Direct and indirect associations through teaching efficacy. *Teaching and Teacher Evaluation, 81*(1), 50–60. https://doi.org/10.1016/j.tate.2019.02.010.

Grant, A. A., Jeon, L., & Buettner, C. K. (2019b). Relating early childhood teachers' working conditions and well-being to their turnover intentions. *Educational Psychology, 39*(3), 294–312.

Grant, S., Comber, B., Danby, S., Theobald, M., & Thorpe, K. (2018). The quality agenda: Governance and regulation of preschool teachers' work. *Cambridge journal of education, 48*(4), 515–532. https://doi.org/10.1080/0305764x.2017.1364699.

Grant, S., Danby, S., Thorpe, K., & Theobald, M. (2016). Early childhood teachers' work in a time of change. *Australasian Journal of Early Childhood, 41*(3), 38–45.

Groeneveld, M. G., Vermeer, H. J., van Ijzendoorn, M. H., & Linting, M. (2012). Caregivers' cortisol levels and perceived stress in home-based and center-based childcare. *Early Childhood Research Quarterly, 27,* 166–175. https://doi.org/10.1016/j.ecresq.2011.05.003.

Hart, P. M., Wearing, A. J., Conn, M., Carter, N. L., & Dingle, R. K. (2000). Development of the school organisational health questionnaire: A measure for assessing teacher morale and school

organisational climate. *British Journal of Educational Psychology, 70*(2), 211–228. https://doi.org/10.1348/000709900158065.

Heckman, J., & Carneiro, P. (2003). *Human capital policy* (No. w9495). National Bureau of Economic Research.

Heckman, J. J., Moon, S. H., Pinto, R., Savelyev, P. A., & Yavitz, A. (2010). The rate of return to the high/scope perry preschool program. *Journal of Public Economics, 94*(1–2), 114–128. https://doi.org/10.3386/w15471.

Hoyle, R. H. (1995). *Structural equation modeling: Concepts, issues, and applications*. Thousand Oaks, CA: SAGE Publications.

Hu, L., & Bentler, P. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modelling, 6*(1), 1–55. https://doi.org/10.1080/10705519909540118.

Hur, E., Jeon, L., & Buettner, C. K. (2016). Preschool teachers' child-centred beliefs: Direct and indirect associations with work climate and job-related wellbeing. *Child & Youth Care Forum, 45*(3), 451–465. https://doi.org/10.1007/s10566-015-9338-6.

Irvine, S. L., Thorpe, K. J., McDonald, P., Lunn, J., & Sumsion, J. (2016). Money, love and identity: Initial findings from the National ECEC Workforce Study. ISBN: 978-1-925553-00-0.

Jeon, L., Buettner, C. K., & Hur, E. (2016). Preschool teachers' professional background, process quality, and job attitudes: A person-centered approach. *Early Education and Development, 27*(4), 551–571. https://doi.org/10.1080/10409289.2016.1099354.

Jeon, L., Buettner, C. K., & Snyder, A. R. (2014). Pathways from teacher depression and child-care quality to child behavioral problems. *Journal of Consulting and Clinical Psychology, 82*(2), 225–235. https://doi.org/10.1037/a0035720.

Jones, C., Hadley, F., & Johnstone, M. (2017). Retaining early childhood teachers: What factors contribute to high job satisfaction in early childhood settings in Australia? *New Zealand International Research in Early Childhood Education, 20*(2), 1–18.

Li Grining, C., Raver, C. C., Champion, K., Sardin, L., Metzger, M., & Jones, S. M. (2010). Understanding and improving classroom emotional climate and behavior management in the "real world": The role of Head Start teachers' psychosocial stressors. *Early Education and Development, 21*(1), 65–94.

McDonald, P., Thorpe, K., & Irvine, S. (2018). Low pay but still we stay: Retention in early childhood education and care. *Journal of Industrial Relations, 60*(5), 647–668.

Munck, I. M. E. (1979). *Model building in comparative education: Applications of the LISREL method to cross-national survey data.* Almqvist & Wiksell International, Stockholm. Available from http://worldcat.org.

National Scientific Council on the Developing Child. (2015). *Supportive relationships and active skill-building strengthen the foundations of resilience* (Harvard University Center on the Developing Child No.13). Retrieved from www.developingchild.harvard.edu.

Noble, K., & Macfarlane, K. (2005). Romance or reality?: Examining burnout in early childhood teachers. *Australasian Journal of Early Childhood, 30*(3), 53–58.

Oberhuemer, P. (2015). Parallel discourses with unparalleled effects: Early years workforce development and professionalisation initiatives in Germany. *International Journal of Early Years Education, 23*(3), 303–312. https://doi.org/10.1080/09669760.2015.1074560.

Organisation for Economic Co-operation and Development (OECD). (2017). *Starting strong 2017: Key OECD indicators on early childhood education and care*. Paris: OECD Publishing. https://doi.org/10.1787/9789264276116-en.

Organisation for Economic Co-operation and Development (OECD). (2019). *Good practice for good jobs in early childhood education and care*. Paris: OECD Publishing. https://doi.org/10.1787/64562be6-en.

Pakarinen, E., Kiuru, N., Lerkkanen, M. K., Poikkeus, A. M., Siekkinen, M., & Nurmi, J. E. (2010). Classroom organization and teacher stress predict learning motivation in kindergarten children. *European Journal of Psychology of Education, 25*(3), 281–300. https://doi.org/10.1007/s10212-010-0025-6.

Phillips, D., Austin, L. J. E., & Whitebook, M. (2016). The early care and education workforce. *Future of Children, 26*(2), 139–158. https://doi.org/10.1353/foc.2016.0016.

Roberts, A., LoCasale-Crouch, J., Hamre, B., & DeCoster, J. (2016). Exploring teachers' depressive symptoms, interaction quality, and children's social-emotional development in head start. *Early Education and Development, 27*(5), 642–654. https://doi.org/10.1080/10409289.2016.1127088.

Roberts-Holmes, G. (2013). The english early years professional status (EYPS) and the 'split' early childhood education and care (ECEC) system. *European Early Childhood Education Research Journal, 21*(3), 339–352. https://doi.org/10.1080/1350293X.2012.704304.

Shen, H., Magnusson, C., & Rai, D. (2016). Associations of parental depression with child school performance at age 16 years in Sweden. *JAMA Psychiatry, 73*(3), 239–246. https://doi.org/10.1001/jamapsychiatry.2015.2917.

Shin, T., Davison, M. L., & Long, J. D. (2009). Effects of missing data methods in structural equation modeling with nonnormal longitudinal data. *Structural Equation Modeling: A Multidisciplinary Journal, 16*(1), 70–98. https://doi.org/10.1080/10705510802569918.

Shonkoff, J. P., Garner, A. S., Siegel, B. S., Dobbins, M. I., Earls, M. F., McGuinn, L., et al. (2012). The lifelong effects of early childhood adversity and toxic stress. *Pediatrics, 129*(1), e232–e246. https://doi.org/10.1542/peds.2011-2663.

Standing Council on School Education and Early Childhood. (2012). *National early years workforce strategy*. Retrieved from https://www.education.gov.au/early-years-workforce-strategy-0.

Stormont, M., & Young-Walker, L. (2017). Supporting professional development needs for early childhood teachers: An exploratory analysis of teacher perceptions of stress and challenging behaviour. *International Journal on Disability and Human Development*. https://doi.org/10.1515/ijdhd-2016-0037.

The Social Research Centre. (2014). *2013 National early childhood education and care workforce census*. Melbourne, Victoria, Australia. Retreived from https://www.education.gov.au/2013-national-early-childhood-education-and-care-workforce-census.

Thorpe, K., Ailwood, J., Brownlee, J., & Boyd, W. (2011). Who wants to work in child care?: Pre-service early childhood teachers' consideration of work in the childcare sector. *Australasian Journal of Early Childhood, 36*(1), 85–94.

Torquati, J. C., Raikes, H., & Huddleston-Casas, C. A. (2007). Teacher education, motivation, compensation, workplace support, and links to quality of center-based child care and teachers' intention to stay in the early childhood profession. *Early Childhood Research Quarterly, 22*(2), 261–275.

Totenhagen, C. J., Hawkins, S. A., Casper, D. M., Bosch, L. A., Hawkey, K. R., & Borden, L. M. (2016). Retaining early childhood education workers: A review of the empirical literature. *Journal of Research in Childhood Education, 30*(4), 585–599. https://doi.org/10.1080/02568543.2016.1214652.

Tran, H., & Winsler, A. (2011). Teacher and center stability and school readiness among low-income, ethnically diverse children in subsidized, centerbased child care. *Children and Youth Services Review, 33*(11), 2241–2252. https://doi.org/10.1016/j.childyouth.2011.07.008.

Trodd, L., & Dickerson, C. (2018). 'I enjoy learning': Developing early years practitioners' identities as professionals and as professional learners. *Professional Development in Education*. https://doi.org/10.1080/19415257.2018.1459788.

United Voice. (2018). *Fair work commission fails early childhood educators*. Retrieved from www.unitedvoice.org.au/fair_work_commission_fails_early_childhood_educators. Accessed 6 February 2018.

Wells, M. B. (2017). Is all support equal?: Head Start preschool teachers' psychological job attitudes. *Teaching and Teacher Education, 63,* 103–115. https://doi.org/10.1016/j.tate.2016.12.004.

Whitebook, M., Phillips, D., & Howes, C. (2014). *Worthy work, STILL unliveable wages: The early childhood workforce 25 years after the National Child Care Staffing Study*. Berkeley, CA: Centre for the Study of Child Care Employment.

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