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**Title:** Underemployment among mothers of children with intellectual disabilities

**Year:** 2018

**Version:**

**Please cite the original version:**

Chou, Y.-C., Kröger, T., & Pu, C.-Y. (2018). Underemployment among mothers of children with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities*, 31(1), 152-158. <https://doi.org/10.1111/jar.12336>

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## Underemployment among mothers of children with intellectual disabilities

### Abstract

**Background** Mothers with lifelong care responsibilities might involuntarily be non-employed or work part-time, both of which are defined as ‘underemployment’. This study aims to investigate who these underemployed mothers are and what are the factors associated with such employment hardship when having a child with intellectual disabilities (ID).

**Method** An interview survey was conducted in 2011 in two local authorities of Taiwan on 876 working-age mothers with a child with ID; 514 of them were working part-time/non-employed and chosen as participants of this study.

**Results** The mothers with a younger child with ID, a higher level of education, a lower level of family income, and more family members with disabilities were more likely to be underemployed compared with the mothers who were voluntarily working part-time/non-employed.

**Conclusions** The underemployed mothers were more likely to have financial difficulty and heavy caregiving loads; their employment hardship should be of concern for policymakers.

**Keywords:** intellectual disability, underemployment, employment hardship, mother, work-care reconciliation, Taiwan

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## **Introduction**

Women's labour force participation is a critical determinant of socioeconomic well-being and shaped by various factors. Studies indicate that both individual and family factors influence workforce participation decisions of mothers with young children (Ali & Avison 1997, Angrist & Evans 1998, Blau & Hagy 1998, Kagan et al. 1999, Wu & Eamon 2011). Additionally, the willingness to undertake full-time employment is shaped by culture and local labour and care policies and women's role identity (Hays 1996, Kahu & Morgan 2007).

In its recent report 'Women at work' (2016), the ILO has again indicated that the unequal distribution of unpaid care and household work between women and men and between families and the society is an important determinant of gender inequalities at work. Under such circumstances, particularly in Africa and Asia, women are likely to be in 'time-related underemployment' that has low levels of wage and quality of work (ILO 2016). Mothers who have a life-long care responsibility for disabled children have been found to be at an even greater risk of non-employment or part-time employment than mothers of non-disabled children (Lukemeyer et al. 2000, Olsson & Hwang 2006, Baker & Drapela 2010).

Factors influencing workforce participation choices of mothers of disabled children are also more complex than those of other mothers (Baldwin & Carlisle 1994, Chou et al. 2014, Gordon et al. 2008, Porterfield 2002). Labour supply behaviour of these women is practically captured by demand and resources (Todd & Shearn 1996, Einam & Cuskelly 2002, Parish et al. 2004, Chou et al. 2013, Hartley et al. 2014), highly influenced by caregiving demand (healthcare needs), support from spouse, support from personal networks, and social service use.

In Taiwan women's employment rate is still lower than in many Western countries, though it has increased from 51.4% (15–64 year-olds) in 2004 to 56.3% in 2014 (Executive Yuan, Taiwan 2015). However, Taiwanese government policies supporting reconciliation of paid work and care among the mothers of offspring with disability are not well-institutionalised. For example, paid parental leave (60% of salary for 6 months) has been available to parents of under-3-year-old children only since 2009. However, Taiwanese public policy does not support informal caregivers' employment offering e.g. flexible working hours. Formal support (cash benefits and social services) is only provided to people with a disability or to older adults in low-income families. When using social services, such as homecare, day care, respite, or residential care, the family must pay or co-pay for services according to their income level.

The official definition of unemployment in Taiwan is being not currently employed but available to work and looking actively for a job; an individual is out of the labour force when he/she is not looking for a job because of education, household responsibilities, old age or disability (Executive Yuan, Taiwan 2016). However, these definitions cannot completely cover all mothers with childcare responsibilities who would like to be involved in the labour market.

Jensen and Slack (2003) categorized underemployment into three conditions: underemployment due to involuntary part-time employment, low income, and over qualification. Underemployment rates for women tend to be higher than for men, particularly for single mothers (Dooley et al. 2000, Jensen & Slack 2003, Kahne 2004, Wu & Eamon 2011). However, debates on work and care reconciliation policies have so far failed to examine the reasons for involuntary part-time work or absence from the labour market among mothers of disabled children.

Mothers of disabled offspring could be out of labour force involuntarily. Thus, in this study we used the term 'non-employment' to cover mothers who were either

unemployed or out of labour market. Furthermore, we defined mothers who were involuntarily non-employed or working part-time as ‘underemployed’ in comparison with those who were ‘voluntarily working part-time/non-employed’ (Figure 2). The research question of this study is: who are these underemployed mothers of disabled children and what factors are associated with their employment hardship?

## **Method**

### **Data collection and participants**

In this study, the participants were working-age (18–64) mothers of children with intellectual disability (ID) who were not working full-time (i.e., working part-time/non-employed). Between January and June 2011, we conducted a survey and face-to-face interviews with all working-age mothers of an offspring with ID (some of which had multiple disabilities, MD+ID) in two local authorities (Hsinchu City and Hsinchu County) in Taiwan. Hsinchu City is an urban area while Hsinchu County is predominantly composed of remote (mountainous) areas (Hsinchu City Government, Taiwan 2016, Hsinchu County Government, Taiwan 2016) (for details of data collection, e.g. sampling criteria and ethical approval, see Chou et al. 2016 and Figure 1 of this study).

Among 876 working-age mothers who completed the survey, 362 were working full-time and 84 part-time, while 430 were non-employed (Figure 1). In this study we included only non-employed and part-time working mothers (n=514) (Table 1).

*Figure 1 here*

The mean age of participating mothers was 49.5 years. Most (85.4%) lived in urban areas, while their average weekly hours of caregiving for the child with ID was 46.4. 93.2% lived with children with ID. The mean age of offspring with ID was 22.2 years, and 6.8% of them used residential and 48.8% daycare/day services (Table 1).

*Table 1 here*

## **Variables and measures**

*Dependent variable.* First, the mothers' employment status was determined based on two questions from the survey (Figure 1). Following, the dependent variable was categorized into three conditions: underemployed/G1 (i.e., involuntary working part-time/non-employed), voluntarily working part-time/non-employed/G2, and status uncertain/G3 (Figure 2).

*Independent variables.* Mother's marital status, residential area, whether the child with ID used residential services, and daycare service use were coded as dichotomous variables. The disabled child's age, weekly caregiving hours for the offspring with ID, and number of disabled family members were coded as continuous variables. Mothers' *health* and *family income* were coded as ordinal categories. The daily life functioning of the child with ID (ADL) and activities of instrumental daily living (IADL) were based on the Barthel Index (Mahoney & Barthel 1965) and the Philadelphia Lawton and Brody Index (Lawton & Brody 1969). *Father's support* was measured by the question, 'Is your husband/partner helpful for caring for your child with ID?'; the mothers' *informal and formal support* was measured using a translated version of the Family Support Scale (Dunst et al. 1984). Mothers' role identity was measured using the questionnaires of the International Social Survey Program 2002 Taiwan version (ISSP 2010); mothers' quality of life was assessed with the WHOQOL-BREF Taiwan version. For more details about these scales, see Chou et al. 2016.

## **Data analysis**

We utilized ANOVA and a cross-table to determine whether the three groups (G1, G2, and G3) of mothers varied from each other (Table 2). Logistic regression was used to estimate the factors associated with the mothers' membership in G1 vs. G2 (G1 was

coded '1', G2 was the reference group of the dependent variable and coded '0', while G3 was removed from regression analyses) (Table 3).

## Results

Over half (273 out of 514; 53.1%) of mothers working part-time and non-employed desired to work full-time and were thus underemployed (Table 2). The underemployed mothers (G1) were more likely to be younger ( $P<0.01$  and  $P<0.05$ ), more highly educated ( $P<0.001$  and  $P<0.01$ ), have a higher level of formal support ( $P<0.05$ ), and a younger child with ID ( $P<0.001$ ) than another two groups, and have more family members with disabilities ( $P<0.05$ ) and a lower level of family income ( $P<0.01$ ) than the mothers who were voluntarily working part-time/non-employed (G2). Mothers in G2 had a stronger traditional role identity than mothers who were uncertain of their status (G3) ( $P<0.05$ ). Additionally, G2 had a higher quality of life than the other two groups ( $P<0.01$  and  $P<0.05$ ).

*Table 2 here*

The mothers whose child with ID was younger (OR=0.94,  $P<0.001$ ), who were more highly educated (OR= 1.09,  $P<0.05$ ), had a lower family income (OR= 0.85,  $P<0.01$ ), and had more family members with disabilities (OR=1.36,  $P<0.05$ ) were more likely to be underemployed than to belong in G2 (Table 3).

*Table 3 here*

## Discussion

The results of this study indicate that, when discussing mother carers who are non-employed or working only part-timely, it is necessary to pay attention to the differences among these mothers, in terms of whether their work status is voluntary or involuntary. From a wellbeing perspective, underemployed mothers were more likely to have a lower

quality of life than mothers who were voluntarily working part-time/non-employed (Table 2). This suggests that underemployed mothers should be of primary concern for policymakers and practitioners.

In terms of caring work, a risk factor associated with mothers becoming underemployed, it is worthwhile to point out that underemployed mothers not only had caregiving responsibilities for their children with ID but also for other family members (e.g. other young children, older family members or spouse with disabilities) (the table of descriptive statistics not shown). This might suggest that this group of mothers are also more likely to be dual/triple carers within their families, being at the same time mother carers of a child with ID, mother carers of other young children, daughters or daughters-in-law of older parents and/or spouse carers of a husband with disabilities.

Our results are consistent with previous Western as well as Taiwanese studies (Eisenhower & Blacher 2006, Chou et al. 2010, Bourke-Taylor et al. 2011) that have indicated that financial situation is critical for part-time working mothers and non-employed mothers of disabled children; our study also extended such findings to mothers who are underemployed. Our findings also echo Chou et al.'s (2012) findings which have showed that work-care reconciliation policies and services also need to pay concern to non-employed mothers, particularly to those who have financial difficulty, who have a young child with ID or whose child has high support needs. In Taiwan, welfare and labour market policies (including disability and childcare policies) do not support women to combine work and family care. According to findings of Chou et al. (2014), having a child with ID is an indirect reason why many mothers have left the labour market, in particular as, with a disabled child, care responsibility is lifelong. Unaffordable long-term day-care services are another reason.

Surprisingly, the regression model did not show mothers' social support (use of day care services and support from formal networks) to be a significant factor associated with



mothers' desire to work full-time. This may suggest that such long-term support and available resources from both internal and external family systems are not really working for mothers who undertake lifelong caregiving. Such findings echo a previous Taiwanese study (Chou & Kröger 2014) that indicated that these mothers' care support was extremely limited during their life cycles of long-term caregiving.

There are several implications for state policies and for research concerning care-work reconciliation among mothers with lifelong caregiving responsibilities. First, governmental definitions of part-time workers and being out of the labour market do not seem to be adequate for this group of mothers. Instead, the concept of underemployment gives a more realistic picture of mothers' employment hardship when having a lifelong care responsibility. Second, in order to preclude mothers from becoming underemployed, social welfare and labour policies, including those related to employers, need to prioritize mothers whose children with ID are particularly young as well as those mothers who are carers of more than one family member. Third, mothers who are also carers of other family members with care needs are a group that is necessary to be explored further by a future qualitative study. Fourth, financial support or the reduction of the co-payment for using social services would be another alternative policy for those mothers having financial difficulties. In addition, cross-national comparative research is needed to analyse and compare how these mothers' underemployment is associated with social policies and cultures of different nations.

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**Table 1** Characteristics of the participants (n=514)

Variables	M/SD (range)	%
ID child's age	22.2/9.1 (4-44)	
ID child's ADL <sup>a</sup>	88.9/22.7 (0-100)	
ID child's IADL <sup>a</sup>	11.0/7.0 (0-24)	
ID child: use of residential services <sup>b</sup>		6.8
ID child: use of daycare services <sup>c</sup>		48.8
Mother's age	49.5/8.7 (26-65)	
Mother's years of education	8.8/3.5 (0-19)	
Mother's marital status/with partner <sup>d</sup>		83.5
Mother's hours of caregiving (weekly)	46.4/44.1 (0-168)	
Number of family members w/disability	1.47/0.8 (1-7)	
Family income (monthly)		
<NT\$20,000 <sup>e</sup>		29.7
NT\$20,000–40,000		38.3
NT\$40,001–60,000		19.1
NT\$60,001–80,000		7.1
>NT\$80,000		5.9
Residential area/urban <sup>f</sup>		85.4
Mother's health <sup>a</sup>	2.8/0.9 (1-5)	
Father's support <sup>a</sup>	2.2/1.1 (0-3)	
Informal support <sup>a</sup>	14.6/5.4 (0-33)	
Formal support <sup>a</sup>	5.3/3.2 (0-17)	

Mother's role identity <sup>a</sup>	36.2/3.6 (22-48)	
Mother's QOL <sup>a</sup>	86.1/14.5 (39-124)	

<sup>a</sup> With a higher rank/score indicating a higher level of daily life functioning of ADL and IADL, better health, higher father support, greater informal and formal support, more traditional role and a better QOL.

<sup>b</sup> Whether the child with ID used residential services recoded as 'yes' and 'no'; those answering that their child with ID lived with the family were defined as 'no', and those with other answers (living in an institution, boarding school, rehabilitation center or hospital, boarding vocational sheltered workshop, or group home) were defined as 'yes'.

<sup>c</sup> Daycare service use recorded as 'yes' and 'no'; those who answered that their child with ID uses any kind of daycare, homecare, or respite care service were defined as 'yes', while the others were defined as 'no'.

<sup>d</sup> Mother's marital status recoded as 'married' for married or cohabiting; and 'single' for single, widowed, divorced, or separated.

<sup>e</sup> 1US dollar = 30.0 NT dollars.

<sup>f</sup> Residential area recoded as 'rural' or 'urban'.

**Table 2** Characteristics of the underemployed and voluntarily working part-time/non-employed mothers (n=514)

Variable	G1 <sup>a</sup>	G2 <sup>b</sup>	G3 <sup>c</sup>	F (post hoc)	$\chi^2$
ID child's age (M)/(SD)(range)	19.4(8.7) (4-44)	25.5(8.5) (6-43)	24.6(8.8) (5-42)	29.63 <sup>***</sup> (G2>G1 <sup>***</sup> ; G3>G1 <sup>***</sup> )	
ID child's ADL (M)/(SD)(range)	88.7(22.4) 0-100	89.2(23.3) 0-100	88.4(22.5) 0-100	.04	
ID child's IADL (M)/(SD)(range)	11.0(6.7) 0-24	11.0(7.2) 0-24	11.3(7.1) 0-24	.06	
ID child's use of residential services (%)	8.8	3.3	8.6		5.59
ID child's use of day- care services (%)	48.0	53.8	37.9		11.62 <sup>*</sup>
Mother's age (M)/(SD)(range)	45.2(8.9) 29-64	52.0(7.8) 33-63	50.8(6.5) 38-64	7.41 <sup>**</sup> (G2>G1 <sup>**</sup> , G3>G1 <sup>*</sup> )	
Mother's years of education (M) /(SD)(range)	9.5(3.4) 0-19	8.1(3.6) 0-18	7.6(2.8) 0-15	12.00 <sup>***</sup> (G1>G2 <sup>***</sup> , G1>G3 <sup>**</sup> )	
Mother's marital	229(83.9)	155(84.7)	45(77.6)		1.69



status/with partner (%)				
Mother's hours of caregiving (weekly) (M) /(SD)(range)	47.0(41.5) 0-168	44.1(46.8) 0-168	50.4(47.9) 0-168	.51
Number of family members w/disability (M) /(SD)(range)	1.5(1.0) 1-7	1.3(.6) 1-4	1.6(.8) 1-4	4.13* (G1>G2*)
Family income (%)				32.64***
<NT\$20,000	30.8	27.8	30.3	
NT\$20,000– 40,000	43.6	26.7	50.0	
NT\$40,001– 60,000	15.4	26.1	14.3	
NT\$60,001– 80,000	6.6	8.3	5.4	
>NT\$80,000	3.7	11.1	0	
Residential area/urban (%)	83.5	91.8	74.1	12.70**
Mother's health	2.8(.9)	2.9(.9)	2.8(.9)	1.10

(M)	1-5	1-5	1-4	
/(SD)(range)				
Father's support	2.2/1.1	2.3/1.1	2.1/1.2	1.22
(M)	(0-3)	(0-3)	(0-3)	
/(SD)(range)				
Informal support	12.5/5.2	12.5/4.9	11.3/4.2	1.45
(M)	(0-27)	(0-30)	(2.25)	
/(SD)(range)				
Formal support	5.8(3.3)	4.9(2.9)	4.5(2.9)	7.04 <sup>**</sup>
(M)	0-17	0-14	0-10	(G1>G2 <sup>*</sup> , G1>G3 <sup>*</sup> )
/(SD)(range)				
Mother's role identity	36.0(3.7)	36.7(3.7)	35.3(2.6)	3.64 <sup>*</sup>
(M)	22-47	25-48	30-40	(G2>G3 <sup>*</sup> )
/(SD)(range)				
Mother's QoL	85.2(14.1)	90.1(14.7)	84.1(14.5)	7.28 <sup>***</sup>
(M)	39-124	52-124	51-117	(G2>G1 <sup>**</sup> , G2>G3 <sup>*</sup> )
/(SD)(range)				

<sup>a</sup>G1= Underemployed mothers (want to work full-time) (n=273, 53.1%).

<sup>b</sup>G2 = Voluntarily working part-time/non-employed mothers (n=183, 35.6%).

<sup>c</sup>G3 = Mothers with an uncertain status (n=58, 11.3%).

\*  $p<0.05$ ; \*\*  $p<0.01$ ; \*\*\*  $p<0.001$ .

**Table 3** Logistic regression analyses of underemployed and voluntarily working part-time/non-employed mothers (N=456)

	Underemployed mothers (n=273)		
	OR	95% CI	P-value
Age	0.940	0.915-0.965	0.000
Residential area (rural) (ref. urban=0)	1.684	0.853-3.325	0.133
Use of daycare services	1.132	0.892-1.437	0.308
Mother's education	1.092	1.016-1.173	0.017
Family income	0.846	0.763-0.938	0.002
No. of family members w/disability	1.364	1.014-1.835	0.040
Mother's formal support	1.048	0.978-1.124	0.183
Mother's role identity	0.945	0.892-1.001	0.056

Note. 1. For logistic regression model  $\chi^2 = 84.13$  ( $p < 0.001$ ); Nagelkerke  $R^2 = 0.23$ . Reference group=mothers voluntarily working part-time/non-employed (n=183).

2. As shown in Table 2, only those independent variables that were significantly related to the mother's underemployment or voluntary working part-time/non-employment were entered into the regression model analysis due to the small sample size. In order to prevent multicollinearity, correlation analyses were conducted between the 18 independent variables. On the basis of the correlation matrix (not shown), we then removed the ADL and IADL of the child with ID, the mother's age, and overall QOL from the regression model because these variables were found to be highly related to other variables (age of child with ID, hours of caregiving for child with ID, and mother's health) ( $r > 0.5$ ).