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Supported Employment for people with mental disabilities in South Africa: cost calculation of service utilisation

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ABSTRACT

Introduction: *Supported Employment (SE) is a strategy that facilitates positive employment outcomes for people with mental disabilities in open labour market settings. SE's cost-effectiveness has been established internationally, but not in South Africa. This paper reports on the cost and affordability of SE services offered to people with mental disabilities in South Africa.*

Method: *A longitudinal descriptive study was used to determine the cost of SE service components utilised by people with mental disabilities, from two programmes in the Western Cape. The utilisation of service elements was captured in 15-minute time units. Data collection continued for 12 months, commencing when a job had been identified and preparation for placement had ensued. Time utilisation data were used to calculate cost, using a government sessional salary (R189/hour) and a medical aid reimbursement rate (R367/hour) of occupational therapists acting as job coaches.*

Findings: *The findings show SE services to be less than 10% of the cost of a monthly disability grant, and 10% - 21% lower than the current subsidy per consumer in a protective workshop.*

Conclusion: *Evidence from the study thus reflects the cost of SE services to people with mental disability as substantially lower than the current government investment in disability grants and protective workshops subsidies.*

Key words: psychiatric disability; intellectual disability; vocational rehabilitation; reasonable accommodation; return to work

INTRODUCTION

Work as an occupation of daily living holds benefits for any person participating in it[1,2,3,4]. It has been established though, that people with psychiatric and intellectual disabilities experience extensive barriers to participation in work as employment (distinguished here from unpaid work), inclusive of stigma and complex support needs[5]. Moreover, in South Africa, job seekers with psychiatric and intellectual disabilities compete for jobs in the context of a 25.6% general unemployment rate[6]. The consequences are reflected in the very low 1.2% formally reported people with disabilities that are currently employed[7] (disability employment figures have fluctuated between 1.3% in 2003 and 0.9% in 2013[8]). Considering high levels of unemployment of people with disabilities in South Africa, the need for an effective employment strategy is evident.

Supported Employment (SE) as a strategy facilitates the inclusion of people with disabilities in competitive (open labour market) employment, and has proven to be effective in producing positive employment outcomes for people with mental disabilities[9,10,11]. Although international literature reflects SE as a preferred strategy for (re-)integration of people with disabilities into work - with its cost-effectiveness having been established in several instances[12] - no costing studies of SE services exist in South Africa. Locally, the development of SE services has been restricted by, amongst other factors, funding, and the disability grant system[13].

Perceived or expected cost of an SE service may deter employers from employing people with disabilities who may require long term support. For this reason, determining the actual cost of an SE service in South Africa becomes paramount. Cost-efficiency methodologies are defined as those examining whether the monetary value of a programme exceeds the monetary cost, while the analysis of cost-effectiveness reveals the benefits and costs of several programmes that produce the same outcome[14]. The study reported here reflects cost based on time utilisation of SE services, and therefore does not attempt to comment on effectiveness or efficiency. We consider this study to be preliminary to future costing studies of SE in South Africa.

Funding for SE services

The cost of SE influences access to funding for such services. Different sources of funding have been considered in the literature. A common barrier to implementing evidence-based SE practice, is money to finance start-up and ongoing programme costs[15]. In two USA states, the Health Care Financing Administration allows reimbursement from Medicaid financing (a federal and state funded health care programme) for SE services. SE services made possible by this funding in New Hampshire, contributed to a substantial increase in employment for people with severe mental illness over a period of five years[16]. In Rhode Island two sites that used this

funding model were monitored, and findings showed that 54% and 74% of people who had enrolled with the respective programmes, obtained competitive employment[17].

SE services in the USA have also been funded by the Ticket to Work Programme (TTW), which was developed to finance support services that focus on getting people with disabilities economically active and self-sufficient[18]. Notwithstanding challenges, the enrolment of people with disabilities in the programme has been steady since its inception in 2002. A year after enrolment many participants are expected to earn enough money to stop drawing a state support grant.

To promote effective application of funds and enhance employment outcomes for people with disabilities, five other states in the USA introduced direct incentives to local programmes that achieved employment goals for people with disabilities[19,20,21]. In Alabama, Oklahoma and Pennsylvania, state vocational rehabilitation agencies initiated "results-based funding" for SE which rewarded agencies for performance[21]. In Ohio, participating programmes doubled their employment rate[19], while in New Hampshire, the competitive employment rate for clients with severe mental illness increased from 7% to 37% in the nine years after the state started emphasising competitive employment[20].

South Africa's legislative and policy environment has the potential to support the development of services that facilitate equal access to employment for people with disabilities[13]. The implementation of more 'traditional' models of Vocational Rehabilitation[a] (VR) has been supported by such policies, with limited available funding for work (re-)integration services being directed towards hospitals, rehabilitation and/or protective work contexts[13]. Ongoing support during work placement, such as prescribed by the SE model, is currently not funded.

The authors concluded, based on the literature reviewed, that SE was the only vocational rehabilitation approach for people with severe mental illness that showed strong evidence on which to base practice[15]. SE services should therefore be made available on a widespread basis, rather than continuing with many vocational programme approaches that have not been shown to be effective[15]. This article reports on a study (conducted during 2009 and 2010) that captured time utilisation patterns to calculate the cost of an SE service offered to people with mental disabilities in the Western Cape Province. Time utilisation patterns were published elsewhere[22]; then used here to calculate the cost of an SE service based on private medical aid rates and sessional government rates.

METHODOLOGY

A longitudinal descriptive study was conducted. The following criteria were used to delineate SE: (1) Participation by a person with a mental disability in competitive employment, (2) conditions of employment, including remuneration, were contracted directly with the person with the disability and were market related, and (3) on-going support (e.g. job coaching) was provided as a form of reasonable accommodation.

Ethical approval for the study was obtained from the University of Cape Town Health Sciences Faculty Ethics Committee (REC REF: 281/2009).

Participants and programmes

Criterion sampling was used to select participants who were of working age, expressed a need to work and had been diagnosed with either a psychiatric disability (PD) or intellectual disability (ID). Programme A was for persons with PD and Programme B for persons with ID. Additionally, all participants were first-time service users of one of the two SE programmes.

The SE programmes complied with critical components of the SE Fidelity Scale[23] with two exceptions. Firstly, the employment specialists were occupational therapists, with case management included in their work role. Secondly, rapid attainment of competitive employment was not a realistic goal in the South African context.

Programme A operated from a psychiatric hospital in Cape Town. The programme served individuals from forensic wards, general wards and the out-patient department. An occupational therapist and occupational therapy assistant offered job coaching and job support to workers in the programme. Contracts between employers and workers included agreed terms for reasonable accommodation, such as leave to attend to medical appointments or to collect social grants. Most individuals referred to this programme had a long history of unemployment, had had limited education (mainly primary school level) and were from low socio-economic circumstances. The programme had been operational for 12 years and had secured employment for an average of 25 workers per year (approximately 40% of programme participants). The majority of workers were employed on fixed-term contracts for which job tenure varied according to the availability of contract work (e.g. bottle packing, packaging spices, lock assembly and cleaning). Permanent jobs obtained by individuals in Programme A included vegetable farming, paper making, food production and book packaging. The programme was funded from government-sourced reintegration benefits for persons with disability.

Programme B was offered by a mental health organisation, and financed by the public mental health authority. An occupational therapist and two job coaches provided services to individuals who successfully completed a bridging programme in preparation for employment in the open labour market. The job coach assisted the participants during job interviews, and in negotiating reasonable accommodation in the workplace. Accommodations included attendance of a monthly support group, developing and providing picture schedules and duty lists to individuals, more time to master new tasks and access to a job coach as was needed during performance appraisals and disciplinary procedures. The participants in the bridging programme were selected from work skills training programmes at two protective workshops which operate as a project of the mental health organisation. Participants were from low socio-economic, previously disadvantaged areas, had had limited education (mainly Special Education, and had left school without any certified academic qualification) and had never worked in the open labour market before. The programme had been operational for eight years and secured employment for 56 persons with intellectual disability. Information about the proportion represented by these 56 people, was unavailable. These individuals were employed in entry level jobs in the open labour market, as, for example, cleaners, laundry assistants, assistant carers, basic assemblers, gardeners and assistant groundsmen. Employment contracts varied between fixed term contracts and permanent employment.

The two occupational therapists employed by the organisations that ran programmes A and B, managed the services offered by each programme. By virtue of their professional knowledge, skills and experience they were able to offer specialist support. However, because it was not feasible for them to offer one-on-one job coaching they provided in-service training to support staff who then offered job coaching under close supervision. Both of these occupational therapists participated as researchers in the study.

Data collection

A data capture sheet comprising the components of SE was developed. These components originated from the literature and the work experience of the authors of the van Niekerk et al. article[22], who were also SE providers. A pilot study was conducted with the job coaches of Programme B to refine the components and increase the validity of the data capture sheet. As a result of the pilot study, the data capture sheet was amended to distinguish between interventions done on the job site (i.e. on-site) and those done away from the job site (i.e. off-site), to differentiate between group and individual intervention, and one component, namely administrative

[a] Sheltered and protective workshops, work rehabilitation services in hospitals and industrial therapy

tasks directly related to SE, was added. These changes improved the sensitivity and specificity of the data capture sheet. SE components were grouped into categories and the final data capture sheet used in this study was created (see *Table I*).

Table I: Data capture sheet

		On-site		Off-site	
		Indiv	Group	Indiv	Group
Administration	Administrative tasks directly related to SE				
Non-job Advocacy	Non-job advocacy with parents				
	Non-job advocacy with landlords				
	Non-job advocacy with case managers				
	Non-job advocacy with therapists				
	Non-job advocacy with educators				
	Non-job advocacy with bank personnel				
	Non-job advocacy with doctors				
	Communication with guardians				
	Workers' rights				
Personal Life Skills	Training - money handling				
	Training - grooming				
	Training - use of transportation				
	Training - management of symptoms				
	Health and Safety				
	Time Management				
	Training -communication				
Simulated Work	Training - simulated work				
Prepare Work Placement	Programme development: Trial placement				
	Person-centred instructional plans				
	Job advocacy - at job site with employers				
	Job advocacy - co-workers (and customers)				
	Communication with involved agencies				
Transportation	Transportation				
Work Assessment	Evaluation of employment potential				
	Evaluation of goodness of job fit				
Work Visit	Work visit to observe real work				
	Work visit to discuss reasonable accommodation				
	Work visit to assist with performance appraisal				

Data collection commenced when a particular job had been identified for a participant and preparation for placement ensued. Data was collected for a period of 12 months by job coaches who prospectively recorded the SE components consumed by individual participants in 15-minute time utilisation units. Data verification throughout and at the end of the data collection period was done in monthly meetings between the researching occupational therapists and the job coaches. The researchers also met three-monthly to discuss and verify the quality of the data. This process of verification increased reliability and validity of the data collection tool by ensuring consistent application of terminology, and ensured accuracy and consistency of data collection methods.

Data analysis

The average monthly utilisation of SE components for the two groups of participants was calculated. On- and off-site service utilisation was differentiated, as well as service utilisation in individual- vs. group formats, because it has direct implications for service cost. Service utilisation of programme A and B were computed for a period of one year and then compared using descriptive statistics. Average monthly and -annual use of each service component was calculated and the overall distribution of services within each group was compared. These results were reported comprehensively elsewhere[22].

For the purpose of this article, two hourly monetary rates were applied to cost calculation of SE services rendered by job coaches who are occupational therapists. (Services rendered by occupational therapists and –assistants were not recorded separately and can therefore not be distinguished). Firstly, the hourly government sessional salary (GSS rate) (R189/hour) for occupational therapists with 10 to 20 years' experience[24] was used. Secondly, the medical aid reimbursement (MAR) rates of two large medical aid schemes for occupational therapists were averaged (R367/hour). It should be noted that the GSS rate covers only the salary cost for an occupational therapist, and does not include overhead cost associated with running a practice; however the latter is factored into the MAR rate. Also, medical aid code structures do not currently reflect SE service elements, and are therefore classified under interview, guidance and consultation codes.

RESULTS

The results section comprises cost calculations and comparison of cost between SE and government services offered to people with disabilities. It is important to note that the results of this study are based on data collected for the period from which the person with the disability was matched for placement in a particular job, and the period of 12 months thereafter. It therefore excludes preparatory SE service components that precede matching and placement.

Table II on page 14 reflects that, based on the GSS rate, services utilised in programme A (n=10) averaged R1 124,87 per month. The average salary cost was therefore R112,49 per person per month. When the SE service cost was calculated using the MAR rate, it amounted to R2 184,26 on average per month, and an average per person cost of R218,00. *Table II* shows the rapid downward progression of average monthly cost for the PD cohort (R6 327.72 (GSS rate)/R12 287,16 (MAR) in the first month to R175,77 (GSS rate)/R341,31 (MAR) in the twelfth month), with almost half of the cost associated with service elements rendered in the first month. In this cohort, 70,4% of services were consumed

Table II: Cost of SE for PD cohort (n=10) over a 12-month period

The cost of SE (PD cohort)				
Month	**Average utilisation of service (hours/ month)**	**GSS Rate (R189,00/h)**	**MAR Rate (R367/h)**	**Average utilisation of service in group format**
1	33,48	6327,72	12287,16	26,6
2	7,03	1328,67	2580,01	3,2
3	8,93	1687,77	3277,31	3,85
4	8,1	1530,9	2972,7	5
5	3	567	1101	2,85
6	3,08	582,12	1130,36	2,8
7	2,13	402,57	781,71	1,98
8	1,9	359,1	697,3	1,48
9	1,18	223,02	433,06	0,95
10	0,78	147,42	286,26	0,65
11	0,88	166,32	322,96	0,5
12	0,93	175,77	341,31	0,4
Total hours	**71,42**	**13498,38**	**26211,14**	**50,25**
Average	**5,951666667**	**1124,865**	**2184,261667**	**4,19**

in group format, implying a further cost reduction per person, which has not been calculated here.

Average monthly utilisation of SE service components in programme B (n=19) was 10.9 hours, translating into an average monthly cost of R2 060,10 at the GSS rate, and R4 000,30 at the MAR rate. The average cost per person per month therefore totals R108,43 and R210,54 respectively. *Table III* reflects the average cost of SE service components utilised by the ID cohort over 12-months. A similar downward trend to that of the PD cohort was found, however, it was less pronounced with almost one third of the cost related to the first month.

Table III: Cost of SE for ID Cohort (n=19) over a 12-month period

The cost of SE for ID cohort			
Month	**Average utilisation of service hours per month**	**GSS Rate (R189.00/h)**	**MAR Rate (R367/h)**
1	39,2	7408,8	14386,4
2	28,74	5431,86	10547,58
3	18,17	3434,13	6668,39
4	11,03	2084,67	4048,01
5	6,74	1273,86	2473,58
6	4,32	816,48	1585,44
7	3,34	631,26	1225,78
8	4,66	880,74	1710,22
9	3,33	629,37	1222,11
10	4,22	797,58	1548,74
11	4,08	771,12	1497,36
12	3,01	568,89	1104,67
Total hours	**130,83**	**24726,87**	**48014,61**
Average	**10,9**	**2060,1**	**4000,3**

The apparent stabilisation of time utilisation during the last three months of data collection was of interest to the researchers. During this time, a low average monthly cost per person is reflected for each cohort, i.e. R16,32 (GSS rate) and R31,68 (MAR rate) per person with PD, and R37,50 (GSS rate) and R72,82 (MAR rate) per person with ID. The combined average cost for the period was R18 per person (GSS rate) and R34,97 (MAR rate).

Table IV: Cost of SE for all participants (n = 29) over a 12-month period

The cost of SE service components for all participants			
Month	**Average utilisation of service hours per month**	**GSS Rate (R189.00/h)**	**MAR rate (R367/h)**
1	37,22	7034,58	13659,74
2	21,25	4016,25	7798,75
3	14,98	2831,22	5497,66
4	10,02	1893,78	3677,34
5	5,45	1030,05	2000,15
6	3,89	735,21	1427,63
7	2,92	551,88	1071,64
8	3,71	701,19	1361,57
9	2,59	489,51	950,53
10	3,03	572,67	1112,01
11	2,97	561,33	1089,99
12	2,29	432,81	840,43
Total hours	**110,33**	**20852,37**	**40491,11**
Average	**9,19**	**1736,91**	**3372,73**

DISCUSSION

The results of this study reflect a low average-per-person cost of SE, considered in relation to current government expenditure on resources that are focused on employment and people with disabilities. The total cost of the service was higher for people with intellectual disabilities, due to their consistently higher utilisation of service elements throughout the study period, showing congruence with evidence about SE as a work integration strategy for people with ID[25].

The South African government offers a disability grant (DG) to people with disabilities who are unable to work. The purpose of this grant is to financially support the person with a disability, and not to facilitate employment. The value of a DG in South Africa is R1 510,00[26] per month. The total cost of a DG to a person for one year is R18 120 whereas the study results show an average annual investment in SE of R719,05 (GSS rate) and R1 396,25 per person (MAR rate) for the year that data were collected. The cost of SE services over one year is less than 10% of the cost of a DG over the same period. SE participants had the added outcome of getting a job, the associated benefits of work, making a contribution to the economy as a tax payer, as well as a reduced requirement for social support. The Department of Social Development (DSD) who manages the social security aid system, allows for people with disabilities to become employed and earn an income, which then gradually replaces the income obtained from a DG[27].

People with disabilities in South Africa do have the option to work in protective factories (previously workshops), while the DSD pays a subsidy per consumer to that factory. Official information on the value of the subsidy was not available in the public domain,

but was confirmed informally to be a uniform amount across each province. It should however be noted that not all provinces pay such subsidies. Factories for people with disabilities in the Western Cape Province receive R550 per service user per month[28]. Over a 12-month period, this totals a cost of R6 600 per person. SE services by programmes included in the study were offered at a substantially lower cost over the same period of time (between 10% and 21% of the annual subsidy, depending on who provides the service). SE promotes an outcome of open labour market employment with the associated monetary and non-monetary benefits[29,30,31], while the same outcome is generally not promoted in a protective environment.

The decrease in service utilisation and stabilisation over the final three months of data collection, led authors to assume that the cost of SE over the long term will remain low and, despite not having collected data beyond one year, the trend suggested a continued decrease in cost. Conversely, evidence from the literature shows that people with disabilities become life-long recipients of DGs[32], suggesting that this cost to governments will remain constant.

Cost-efficiency and cost-effectiveness studies

A comprehensive literature review revealed that 83% of studies that investigated cost-efficiency from the perspective of workers (n=18), concluded that SE was cost-efficient[33]. Findings from studies that investigated cost-efficiency from the perspective of the taxpayer (n=13) were more varied. Six of these studies determined SE to be cost-efficient, five concluded the opposite and two found that SE was sometimes cost-efficient and other times not. Cost-efficiency methodology was criticised though for not taking non-monetary benefits into account, and the lack of systematic studies done from the perspective of employers were highlighted[34].

A cost-effectiveness study revealed a 33,7% cost difference between SE and sheltered employment for people with severe intellectual disabilities, with SE being the cheaper over a three-year period. It was apparent that the associated cost of SE decreased over time, while that of sheltered workshops increased[33]. A study of SE provision in the UK further proved that consumption of mental health services by people who entered employment, reduced significantly[35]. Clients who were enrolled in SE programmes in other studies sometimes used fewer mental health services, particularly day treatment, suggesting, therefore, a cost offset[36].

CONCLUSIONS AND RECOMMENDATIONS

Evidence presented in this article reflects the cost of SE services to people with mental disabilities as substantially lower than monthly DG payments over 12 months when based on the rates used in this study. The authors acknowledge that occupational therapists in private practice will charge for their services based on costing of their practices; as such, rates will differ from practice to practice.

The authors contend that a temporary DG in combination with a grant that is paid to an SE service provider (similar to the TTW of the USA), will assist DG recipients to transition into employment. As such, the return to work grant (RTW) enables people with disabilities who can work to return to work with support (at less than 10% of the cost of an annual DG) to (re-)enter the labour market. The monetary and non-monetary benefits of work, and the associated saving in DG cost to government, make a compelling argument for a RTW grant as a mechanism to fund SE. Furthermore, SE will combat unemployment, work towards poverty reduction and redress inequality as it pertains to people with disabilities.

The feasibility of SE needs to be investigated, especially where it concerns unskilled people with disabilities entering the labour market for the first time. Prospective employers may regard the initial investment in support (even with the proven steep downward cost trend after the first month found in this study) as unjustifiable. However, employers in South Africa have access to mechanisms and strategies to offset an initial investment in SE (for example corporate social investment funds, skills development funding, tax rebates for facilitating learnerships for people with disabilities), and may need to be guided and assisted in utilising such strategies.

Explorations are needed with medical aid schemes to link their health impact with economic goals (like poverty reduction and employment). Motivating for and the development of reimbursement codes that are reflective of SE service elements will promote access to medical aid funds for SE practitioners wanting to render this service. Similarly, engagement with funding sources (for example the Workman's Compensation Fund, Sector Education and Training Authorities, private insurers) that currently support traditional vocational rehabilitation approaches is needed to present SE as a viable alternative strategy for return-to-work endeavors.

Study limitations

It is important to note that SE service components presented here are limited to on-the-job-support components. Components associated with preparation for implementation of the SE service, which, in the contexts where data were collected form part of the service, were not recorded and costed. Preparatory service components include the sourcing of jobs, recruitment of candidates with disabilities, and selection of candidates through job matching. Including these components in an SE service package will increase the cost of the service, and further research is required to determine this cost.

The impetus for rendering SE services in a group format relates to the contextual reality of services in a resource-constrained environment[22]. Offering SE in such a format will be cheaper, as the cost per person during group intervention is lower. Whilst the proportion of services consumed in groups are reported here, no further analysis was done to consider the influence of group format on cost.

SE service cost was compared to DG cost and subsidies of protective workshop, but not to VR cost. Cost information of the latter was not available.

Future research

The current study provided a preliminary exploration of SE costs in South Africa. In order to draw further comprehensive conclusions, more research is required.

The downward trend of SE cost over 12 months suggested that cost might reduce further. Research to collect evidence beyond one year is therefore needed. The exact impact of individual versus group intervention on cost should be further explored.

A comparison of different funding models for services, both locally and internationally is needed. The cost, impact and employment outcomes of skills development initiatives, for example learnerships, and traditional vocational rehabilitation services that has the objective to enhance employment for people with disabilities, should be compared with the cost of SE.

Differences in cost of SE services to consumer groups with specific disabilities, impairments and/or conditions require further consideration because the specific support needs of people from different consumer groups will impact cost.

To ascertain whether SE services in South Africa is a viable, cost-effective strategy for people with disabilities, cost studies need to be done from the perspective of the tax payer.

Dissemination of these and subsequent study results should be done to government departments with disability and employment priorities (e.g. the DSD and Department of Labour) to draw attention to SE as an evidence-based strategy to integrate people with disabilities into the open labour market.

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