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ORIGINAL ARTICLE

# Integrating Interventions That Can Support a Career-Oriented Recovery for Young Adults: Building on the Supported Education Knowledge Base

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**Abstract** Young adults experiencing mental health problems are less educated than their peers, putting them in a more vulnerable position for employment and career possibilities. While Supported employment models have been widely implemented, educational supports may be necessary in order to contribute to longer term and sustainable employment. The aim of this study was to describe the state of current research regarding Supported education services for individuals with mental health problems, with a particular focus on studies that address both educational and vocational goals. A scoping review of articles published between 2000 and July 2020 was conducted. Eight databases were searched, titles/abstracts and full-text articles were reviewed for inclusion. The results, which built on 56 included articles, were analysed both descriptively and thematically. The results suggest that the focus in the literature has primarily been on adapting and implementing models for the needs of different populations and contexts. Many of these build on integrated models focusing on both vocational and educational needs. Despite addressing varied populations and working in varied contexts, it is possible to identify a number of essential components when delivering educational support. The review suggests a need to look at work and studies as equally important from a career development perspective. The knowledge base developed through studying supported education services and the educational components of newly emerging services, can contribute to the further development of integrated models for young adults.

**Keywords** Supported education · Supported employment · Mental health problems · Scoping review

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## Introduction

Young adults experiencing mental health problems, in combination with a lack of opportunities to participate in community life as students and employees, are in a position that may include an increased risk for long-

term marginalization and a need for continuing care as adults [27, 53]. Mental health problems among young adults have also been reported as one of the most frequently cited reasons for not completing studies [47] and several studies have shown that young people with mental illness are less educated than peers of the same age, which puts them in a more vulnerable position in relation to the increased demands of the labor market [12, 57]. Other studies show that for young adults with mental illness who dropped out of school, more than half wanted to return in order to develop skills and improve their job status, as well as to find opportunities for personal growth [14, 34].

Employment and education are developmentally relevant pursuits for young adults, and the hopefulness that comes with opportunities to work towards a career and life as a participating community member have been described as essential elements of the recovery process [68]. Individual Placement and Support (IPS) is a specific vocational program of supported employment (SE) targeted to individuals with psychiatric disabilities, and has a large body of empirical evidence for its effectiveness [6, 10, 33, 41]. Controlled studies have consistently demonstrated significant gains in employment, when compared with traditional vocational rehabilitation services that emphasize skill training, sometimes referred to as the "train-then-place" model [10, 39].

However, recent research has suggested that the positive outcomes associated with IPS may primarily lead to short term and low status employment and that these individuals must become eligible for higher level positions with the potential for advancement [39, 50]. They suggest that the aims of these interventions shift from low paying and short-term jobs, to ones with higher pay, more security, more mobility and sustainable careers. Many researchers suggest that SE models may be most effective therefore when linked to services that support young adults with educational goals, since educational achievements can contribute to more sustainable and higher status employment [39, 50].

Supported education (SEd) is an intervention that supports functioning, success and satisfaction in academic environments. SEd is defined as the provision of individualized, practical support to assist people with psychiatric impairments to achieve their educational goals and has been used successfully to assist them to complete post-secondary education [61]. Despite these positive indications, SEd does not currently have the evidence base that might lead to more widespread dissemination and replication. The relationship between educational and vocational supports is also one that challenges researchers to develop knowledge of long term supports to a participatory and independent life as an adult.

The aim of this study was to describe the state of current research regarding Supported education services for individuals with mental health problems, with a particular focus on studies that address both educational and vocational goals. The following research questions were explored:

How are Supported education services described and delivered and in what way are they integrated with employment-oriented supports?

What are the specific types of needs young adults experience and what outcomes do the services describe and attempt to measure?

What are the essential components of Supported education that are described in the literature?

## Method

This review has been inspired by the methodology of scoping studies [2, 35], and the initial stages were therefore guided by the Joanna Briggs Institute Reviewer's manual [55] This enabled us to capture a broad picture of the SEd research rather than being guided by a highly focused question or specific research designs which is required when conducting a systematic review (e.g. [21, 54]). However, while scoping reviews are most often limited to collating and summarizing the data collected from included studies [35], this review includes a more comprehensive analysis of the collected data (cf. [21, 54]), a strategy that reflects our ambition to achieve broad as well as in-depth knowledge of the current state of research.

### Search Strategies

In line with the ambition of a broad scope, we searched for studies of SEd services designed for individuals with mental health problems; i.e. studies which provided empirical or descriptive presentations of SEd, focused on individuals (age 16 or older) with mental health problems, who studied or had the goal of studying, as well as studies which included outcome

variables and experiences related to educational needs and challenges.

We used various terms (MeSH terms when applicable) relating to mental health problems, such as mentally ill persons, mental disorders, severe mental health problems, psychiatric disabilities, serious mental illness, mental health problems. These were combined with terms concerning education, such as education special/education; education, education special/methods, mainstreaming education/special methods, supported education, supportive education.

Additional inclusion criteria were articles written in English and published in peer-reviewed journals within the time frame January 2000–July 2020. Exclusion criteria were formulated as SEd for other target groups, such as people with substance abuse disorder, intellectual disabilities and/or autism.

Databases used were PubMed, Academic Search Elite, Cinahl, PsychInfo, SocINDEX, ERIC, Scopus, and Cochrane library.

### Selection of Studies

The selection of studies followed these steps: (1) literature search through databases, (2) removing duplicates (3) initial screening of title and abstracts (4) articles that at least one of the authors considered were relevant based on the abstract reviewed in full-text (5) three of the authors worked independently to determine which full-text articles met inclusion- and exclusion criteria, using a predetermined form for support in assessing relevance. References in the included articles were checked for any additional studies relevant for the review. The authors then compared their inclusion-list of full-text articles and these were discussed in order to develop consensus on final inclusion. Since this was a search for a broad scope of SEd-interventions, including studies with varied designs and research methodologies (many of them not described in detail), a structured assessment of study quality was not performed [54].

A flow diagram is provided in Fig. 1. Included publications are marked with an asterisk (*) in the reference list. A summary table of studied included are presented as an appendix (Table 3).

### Data extraction and analysis

A data extraction form was developed in order to capture detailed information relevant for the purpose of this study. Three of the authors independently read each included article and entered data into an excel file. The data extraction process was aligned with the aim and research questions, and utilized the following categories: descriptive data (author, year of publication, study location, aim of the study, study design, participant population), needs or challenges related to educational support described, outcome measures in terms of education, employment, personal recovery, and experiences from users of SEd, discriptions of SEd-models (adaptations of SEd, and integrated examples of SE and SEd) and discriptions pf essential components of SEd.

Background information including year of publication, study design/research methods, geographical location and professional background of the researchers involved, was examined using a simple descriptive quantitative analysis.

Within each of the categories corresponding to the research questions, a directed content analysis was conducted in order to identify, analyze and interpret patterns of meaning [28]. Data relevant for the content analysis was compiled in separate documents, corresponding to the research questions. This procedure helped to record and summarize the data from all included articles. After having read these documents several times, three of the authors worked independently with the analysis by coding the material. Consensus among the authors, regarding the results to be reported, was progressively reached through discussions utilizing an iterative process. The results are presented as four categories corresponding to the research questions presented in this study.

## Results

A total of 56 articles (28 articles 2000–2009 and 28 articles 2010–2020) were identified as relevant (see Table 3). The included studies had varying designs, reporting styles and research methodologies (program evaluations, descriptions of SEd programs, litterature reviews and surveys). The target group in the various studies included individuals with all types of psychiatric disabilities/mental health problems, e.g. anxiety

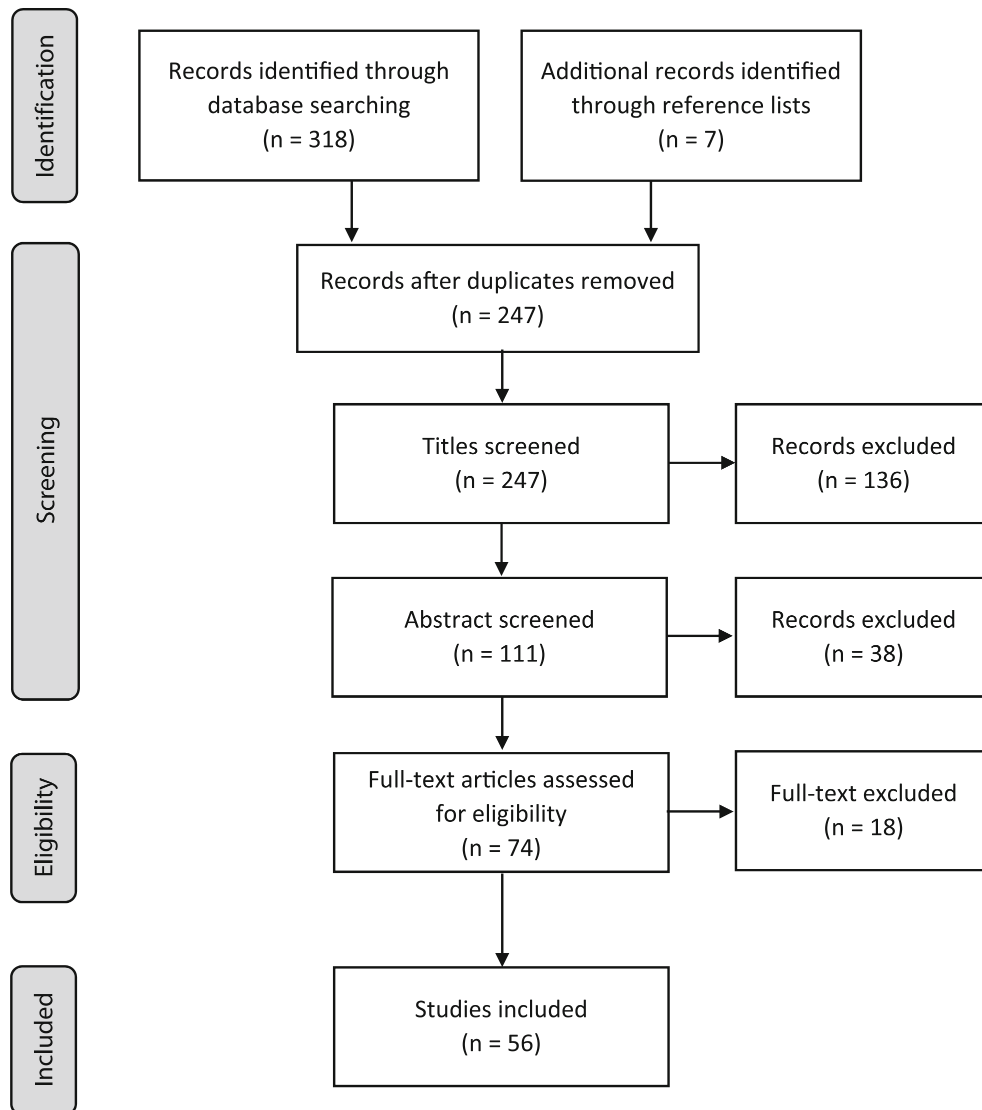


**Fig. 1** Flow diagram of search and selection process

and affective disorders, schizophrenia, bipolar disorders. Most of the studies were completed in the United States (39), the remaining studies in the United Kingdom (2), Australia (6), Israel (3), Canada (2), India (2), Sweden (1) and one collaborative project between the United States and Netherlands. The included articles represented the fields of health care, social care and rehabilitation and the researchers involved in the studies primarily represented psychology, social work, occupational therapy and psychiatry.

The review allowed us to identify some general tendencies in the focus of publications. Many of the articles from the first 10 years (2000–2010) described SEd-models, and evaluations of these services. The following years of the review (2010–2020) consisted of many articles evaluating and/or describing adaptations, the majority of these focused on the integration of SEd into IPS (21/28). However, the tendency to integrate educational goals in vocational models, in order to meet the complex needs of young adults, had already begun during the first period where some

researchers had started to question the long-term sustainability of employment achievements [50].

The qualitative analysis of results will be presented in four categories. The first, *Needs and challenges in an educational context,* describes the individual and contextual aspects of the need for support, including societal opportunities and barriers. The second category, *Measuring outcomes in a real-world context*, describes the results regarding outcomes that are suggested in the literature. The third category, *Evolving models—implementation and adaptation,* describes the models represented in the review and the variation in these, as they were implemented for different populations in diverse organizational and community contexts. The final category, *Essential educational components in supporting a career-oriented recovery*, focuses more specifically on the essential principles and components which were suggested in this review of the literature.

## Needs and challenges in an educational context

This category describes the needs and challenges related to studying, which as described in the literature, were often contextual as well as individual. Several of the included articles describe a need for increased knowledge among staff who meet students with mental health problems (e.g. [63]), for example, the specific challenges and difficulties that can arise in a study context. It also appears that student services, while used to working with different forms of disability, often express a lack of knowledge about the challenges, needs, and opportunities for academic adaptations that would benefit this target group [5, 13].

Several of the studies suggested a need to work with attitudes regarding mental health challenges for students, since among educational actors, there is an impression that higher education may not be an achievable goal for some of these individuals (e.g. [5, 36, 39]). Students described a variety of challenges and needs, such as a lack of knowledge about the services available at universities [13], or that they felt insecure in discussing their mental health challenges and seeking available supports (e.g. [13, 19]). Individuals with mental health problems often have previous experiences of failures related to studies, and describe barriers which are sometimes linked to the illness itself, such as symptoms and issues with treatments/medicine (e.g. [19, 30, 34, 44, 63]). Other barriers to studies include; poor academic self-confidence, a lack of academic abilities and challenges in coping with stress [4, 18, 19, 46, 63, 65] a lack of social skills [19, 46, 63, 65, 69], stigma [4, 34], and economic problems [39, 44, 63]. There seems therefore to be a clear necessity for support and guidance from several different stakeholders with varied responsibilities to collaborate in supporting these needs (e.g. [18, 36]). An additional challenge described was that of identifying ongoing funding for services [25, 38].

In addition to the expected psychosocial needs that may be attributed to the individual experience of illness and impairment, stigma, social isolation and the interruption of life cycle appropriate achievements, a surprising number of needs were identified which were related to what might be considered a societal inability to meet the educational needs of individuals experiencing mental health problems (compare [36]). The combination of the individual impairments and the lack of readiness on the part of the community-based educational systems to meet these needs, were in turn often connected to interruptions in establishing a long-term participation in the work market and a risk for marginalization (Table 1).

## Measuring Outcomes in a Real-World Context

This category includes the outcomes described in the reviewed literature and offer a broad perspective on the types of outcomes associated with supported educational services in studies that evaluated these programs. Twenty-three of 56 articles measured outcomes in relation to a specifically defined SEd intervention, 10 studies 2000–2009 and 13 studies 2010–2020.

The identified studies were primarily uncontrolled evaluations. Five studies employed an experimental design [22, 23, 51, 52, 62]. Two of these evaluated what was primarily a six-week occupational therapy-based SEd program which was focused on skills training and providing individual support in preparation for future studies [22, 23] and the results supported the effectiveness of the program. The remaining three studies evaluated adapted models for younger individuals with a recent onset of psychosis. The Nuechterlein et al. [51] study was still on going (initial RCT) at the time of publication, but the authors reported promising results indicating that

**Table 1** Needs and challenges in a societal context

| Psychosocial challenges | Societal barriers, Mismatch | Interrupted career development |
|---|---|---|
| Impairment/treatment effects | Financial barriers | Drop outs |
| Isolation/not fitting in | High demand society | Education gap |
| Lack of confidence/self-esteem | Lack of service delivery | Lack of social capital |
| Stigma/fear | Lack of cooperation | Unemployment and marginalization |
| Need for relevant skills | Lack of knowledge | |
| Life-cycle appropriate | | |
| Lack of support | | |

IPS principles can be successfully extended to integrate SEd and SE within one treatment program. A recently published study by Nuechterlein et al. [52] evaluated a program where IPS was adapted to meet the needs of individuals whose goals might involve either employment or schooling, by adapting SEd to meet the standards of IPS fidelity. The authors found that the combination clearly supported the efficacy of an enhanced intervention focused on recovery of participants in normative work and school settings, in the initial phase of schizophrenia. Rosenheck et al. [62] used data from the RAISE-ETP which compared usual community care to a comprehensive care program (Navigate), that included a supported employment and education component (SEE), based on principles of the IPS-model. Results showed that persons recovering from FEP (First Episode Psychosis) who received comprehensive, coordinated care, received far more SEE services and showed significantly greater increases in work or school participation over two-years compared to those who received usual community care. Over half of RAISE-ETP patients who had 3 or more SEE contacts, first began these contacts 6 months or more after entering the program. This study suggests that many eventual participants in SEE were not initially interested in employment or school, but developed such motivation over 6 months or longer.

Even uncontrolled evaluations showed promising SEd outcomes and suggest that SEd promotes positive possibilities for begining and completing school, for personal development, to achieve academic goals, for seeking paid employment and to promote recovery (e.g. [3, 24, 31, 66, 67, 72]).

There are additionally a number of uncontrolled studies that suggest the potential of integrated models, those that include supports to both school and employment, to produce benefits for young people with early psychosis [17, 29, 30, 32, 58, 60, 63].

Previous reviews have shown the scientific foundation is insufficient to assess the effects of supported education and that further research is recommended (e.g. [11, 49, 59]).

The various outcomes described have been charted and presented in two descriptive categories in the following table in order to illustrate their range and character.

As seen in Table 2, while the literature includes many of the concrete outcomes related to educational and vocational goals, many of the studies describe and discuss longer term outcomes, and reinforce the recovery-focused goals expressed for many of these services.

### Evolving models: implementation and adaptation

This category describes the results related to the descriptions of Supported education models as they have developed and been implemented throughout the years included in the review. These suggest a process of adaptation as opposed to fidelity to any one particular model. The literature in fact, describes a wide variation of models, including the Self-contained Classroom model (e.g. [7, 22, 31]), the On-site model (e.g. [47]), Mobile support (e.g. [40]), the Clubhouse model (e.g. [47]), the Free-standing model (e.g. [5, 47, 63]), and these often in combination with each other (e.g. [18, 24, 43]) in the same program. These services were based in a variety of settings

**Table 2** Summary of outcomes

| Educational and vocational outcomes | Recovery-oriented outcomes |
|---|---|
| Career-oriented goal planning | Roles – student role/identity |
| Academic skills | Stigma reduction |
| Support service received | Empowerment, future orientation, hope |
| Completed "class room models"/preparation | Confidence, self-esteem |
| Completed education/certificates/degrees/credits | Transition/pathways |
| Retentions/drop outs/stop outs | Social skills/networks |
| Employment—full time/part time | QoL/improved health, economy |
| Job/education fit—improved long-term outcomes (job + education = better conditions) | Coping strategies |
| | Stress management skills |
| | Organizational skills/navigating systems |
| | Engagement in treatment |
| | Social inclusion |

(community mental health centers, college/universities, clubhouses), either in coordination with other services or as a free-standing activity.

In addition to these variations, a number of articles described adaptations of the model including: integrating SEd in IPS services in order to facilitate educational and vocational goals (e.g. [17, 29, 30, 32, 39, 49, 51, 57, 63]). SEd programs were also embedded within the research curriculum of a graduate occupational therapy program provided at a college, with master students participating as mentors [66, 67], and offered through ongoing peer support for service users [15, 17, 60].

Based on the variation in models presented in the literature and the manner in which these were described, the results suggest what might be seen as a process of evolving services, which are influenced as much by local conditions as by one particular Supported education model. Many of these adaptations seemed to develop in relation to the local resources, the population funders were prioritizing, needs in the local community, participating stakeholders in the local community and the variety/availability of collaboration partners (e.g. [3, 9, 16, 36, 40, 46, 64]). More recent trends in the literature suggest that while traditional SEd models have naturally included young adults, integrated models which are based on IPS principles, have only recently begun to prioritize this target group. These include those with various types of mental health problems, but especially those with FEP as reflected in a number of recent studies (e.g. [17, 29, 52, 57, 62, 63]).

### Essential Educational Components in Supporting a Career-Oriented Recovery

This final category describes the components that emerged in the literature reviewed and presents those that were seen as common for SEd services, regardless of which model or adapted model the particular study investigated/presented.

#### *A Person-Centered Approach*

Regardless of the nature of the support, there is a consistent expression that the individual's wishes, needs, and preferences should be the starting point for the services, i.e. person-centered services. SEd specialists support the individual to set goals based on resources and needs, matching requirements based on individual capacity, following up, encouraging, motivating, informing, orienting and coordinating support from different actors based on emerging needs [18, 25, 45, 50, 67, 70]. Individualized support that follows the student over time is described as a basic component in the services provided (e.g. [8, 18, 25, 36, 39, 42, 51, 60]). The support is most often described as provided by an SEd-specialist, although in some cases the educational focus may be

part of a broader responsibility area [17, 39]. The role however, builds on knowledge about the needs of the individual, community resources and expectations as well as factors related to success in educational environments.

*Collaborate/Integrate SEd with School, Care and Other Important Actors*

In the literature, the SEd specialist role, apart from a relationship-based support, is described as a coordinating function in order to create the conditions for collaboration with other important actors. The literature does not describe as clearly as with IPS, that SEd should be integrated into the psychiatric team, but it is clear that close collaboration with psychiatry is described as a success factor (e.g. [23, 45]). In fact, the studies which occurred in collaboration with the Raise study and focus on FEP, are part of a clinical intervention package that includes medication management, family psychoeducation and Individual resilience training along with SEE [29, 30, 51, 62]. Integration or close collaboration of SEd with educational institutions is also a key ingredient in the service provided to support the individual to achieve his/her goals related to education, and to support the transition from patient to student (e.g. [7, 18, 25, 32, 40, 51, 60, 63, 71]).

The SEd-specialist has the task of building a network around the individual focusing on health and success in the study environment. The composition of the network depends on individual needs, for example, with teachers, psychiatric care, peer support services, student health, or IPS specialists. Here, the SEd service also has a responsibility to convey knowledge about SEd and to educate actors involved to the target group's needs related to studies [5, 14, 18, 36, 39, 48]. The literature also addresses funding as a major problem, and counseling about the individual's economic conditions is described as a critical factor (e.g. [14, 18, 36, 39, 50, 64]).

*Individual, Social and Academic Adjustments*

Although support for people with disabilities is offered by most educational actors, the literature suggests that these services are not always actively utilized by individuals with mental health problems. Barriers described include, a lack of information about what rights they have as students, what services are available, as well as a fear of revealing their difficulties to others. As described in the studies, there is a continuing experience confirming that there is a lack of knowledge as to the particular resources and needs of this target group [4, 13, 26, 32, 34]. Advocating for adaptations in the academic environment, based on the individual's needs, is described in the literature as an important part of an SEd service (e.g. [18, 34, 39, 60]). This includes informing educational actors about the potential for academic success for the individual, being a support in negotiating with the institution/teacher about what adjustments should be made, as well as training staff at the school on the challenges and needs of people with mental health problems. Accommodations can include access to technical aids, help with notes, extending deadlines for study assignments, and the opportunity to receive support and accommodations when taking exams.

*Develop, Support and Use Existing Resources*

As mentioned above, the literature describes a wide variety of models often in response to diverse environments. Regardless of where the SEd service is based, the results suggest the importance of the individual receiving support in using the existing resources that the educational institution offers. Examples include the use of the school's existing teachers in special courses aimed at persons with mental health problems [31], guidance from staff at the institution [26, 39], developing support systems at the university level in cooperation with SEd programs, for example extra support after an illness-related absence [69], and supporting the person to make use of the services available to all students (library services, plug rooms, computer rooms, etc.) [5]. Using the existing resources of the school is also seen as contributing to a recovery perspective, allowing participants to develop and integrate in a natural environment [18, 24, 36].

*Develop Individual, Social and Academic Skills*

The international literature about SEd often describes preparatory courses as part of the SEd program (e.g. [7, 22, 25, 46]) in order to prepare the participants for regular studies. These can be offered in for example, classrooms at universities, in a clubhouse or in social

psychiatric programs, and are often conducted by SEd specialists as well as educators. These courses are often described as recovery-oriented, as the aim is for the individual to have the opportunity to learn more about themselves and their ability, how the education system works (apply, orientation on campus), to start thinking about life and study goals and to develop motivation to continue in regular studies. Examples of content include stress management, coping strategies for dealing with symptoms or other difficulties, e.g. to be in a group or socialize, basic academic skills (e.g. writing, counting, computer use) as well as organization, structure and scheduling in order to study [4, 19, 25, 26, 39, 42, 44, 51]). The support is most often provided to groups, but can continue as an individual support, when beginning with regular studies.

In addition, the literature describes the issue of "disclosure", which may require i.e. counseling and support to think about and decide on how much and who to tell about their mental health problems [3, 14, 26, 34, 39, 51]. If the individual decides not to disclose, the SEd Specialist can instead be a support in informing and coordinating with other relevant actors in the educational context, and then with a more general aim of increasing knowledge of mental health needs. Consideration of disclosure in relation to social integrity was considered an essential factor in educational supports, as it could lead to individual adaptations essential to academic success [19].

*Focus on the Physical and Psychosocial Environment*

The issue of life as a student was described as including finding other students to share interests with, working in groups, and daring to make and establish new contacts, all of which can be a daunting challenge [19]. The literature describes the importance of a supportive and positive environment in relation to studies as well [13, 18, 36, 43]. Several articles describe Peer support and mentors as important (e.g. [8, 15, 17, 44]), but also involving family and friends as support during the study period if possible [22, 34]. The importance of attending to sociocultural factors and belief systems as barriers, and the particular importance of family for young adults in many cultures, was emphasized in a study completed in India [4].

*Promote career development*

Much of the included literature suggests a need to consider work and studies as equally important for young adults. Career development is in this context a term that is often applied [8, 9, 17, 18, 26, 36, 45, 60]. The concept includes practical approaches to planning on a longer term basis and often reflects a recovery-oriented philosophy that focuses on hopefulness towards the future [14, 20, 34, 42, 70]. A career orientation addresses the conditions for the individual as they attempt to identify and explore new and valued roles and to develop a longer term focus on attaining employment when their skills and readiness have developed. The literature suggests that a focus on career development can be strengthened by integrating SEd into an IPS service and thus facilitating the individual´s opportunity to be flexible in exploring and choosing a direction, depending on emerging needs and self-defined goals (e.g. [18, 20, 39, 40, 49–51, 57, 60,63, 67]).

While the specific SEd models that have been presented in the literature offer structures for meeting the needs of individuals experiencing serious mental illness, the variety of individuals requiring and utilizing these services at the present time, and the resources available in differing contexts, suggest the need for programs that develop methods based on the types of generalizable components, as presented in Fig. 2. At the same time, some recent studies suggest a need for more research describing the particular factors and components which comprise SEd in order to develop the evidence base for this intervention [8, 9, 20, 59, 66].

Figure 2 is presented as a summary of the essential components described above.

## Discussion

The aim of this study was to describe the state of current research regarding Supported education services for individuals with mental health problems, with a particular focus on studies that address both educational and vocational goals. The results suggest that the focus in the literature has primarily been on adapting, implementing and, measuring outcomes for integrated models, most often based on IPS principles. While SEd has traditionally and appropriately

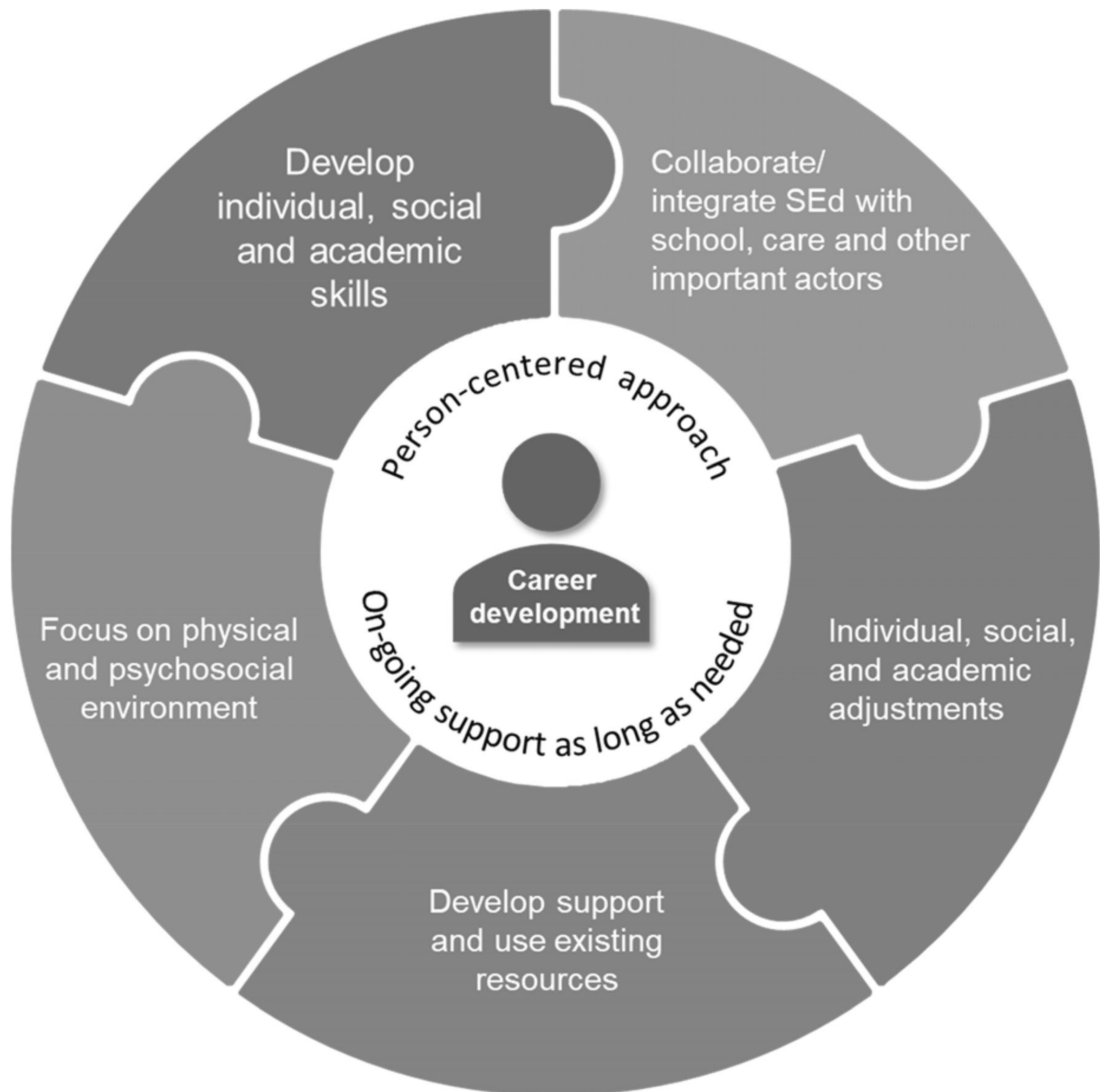


**Fig. 2** Essential components which emerged from the literature

attempted to serve the needs of young adults, the introduction of this focus in IPS models has contributed to a shift in perspective to long-term needs and goals, one that describes a dynamic career orientation. While promising results have been demonstrated with integrated models, the literature suggests a further need for defining these models and adapting their components in order to reflect the specific and developmental needs that young adults experience as they pursue a career while struggling with mental health problems.

### Towards an Integrated Framework

Earlier attempts to implement SEd were based on a number of models, which while exceedingly important in a developmental phase of this intervention, seem to have been replaced by a number of adapted and emerging models. The diversity of models that were

reviewed suggest both challenges and opportunities for the future development of Supported education services. They demonstrate broad flexibility and capacity for adaptation, while still considering the basic principles upon which the intervention is based. Recent literature points primarily however to a continued effort to develop integrated services building on IPS principles, and often focused on young adults [11, 29, 51, 57]. The development of more concretely defined, and in some cases manualized models of integrated services, has been studied in response to the needs of those experiencing FEP [30, 52, 62]. This attention to the needs of young adults may be seen as contributing to a more holistic focus on both vocational and educational goals, since there are specific challenges, contacts and context-related supports that may vary from those experienced by traditional IPS services.

The literature suggests that there are a number of environmental and process-based factors that may require further adaptations of the IPS principles [8, 9, 18, 30]. These findings have additional implications for implementing Supported education services in varied social welfare- and health care systems. A lack of clarity in models and appropriate outcomes may lead to a lack of clarity in organizational responsibility [36] and expectations of rapid employment outcomes, as opposed to the longer term outcomes which characterize SEd services that routinely support such natural educational progressions.

## Towards a career-oriented recovery

The psychosocial needs and challenges described in the literature are familiar to all working with rehabilitation and recovery models, and the majority of existing educational and vocational models address these in some way (e.g. [18, 43, 44, 63, 71]). However, the societal challenges that were discussed in the literature, are quite specific to the educational life contexts, and therefore worthy of further study [38, 50, 74]. This review suggests that societal challenges influence the individual´s life and career trajectory in a somewhat broader and long-term manner than factors related exclusively to employment. These may contribute to a long-term marginalization that goes well beyond the experience of unemployment as an immediate challenge. The outcomes described support a long-term career-orientation as well, one that might be examined from a life cycle perspective which highlights challenges related to various phases of life [56].

When considering long-term life-cycle related needs, translating and adapting IPS principles to include educational goals is described as a promising path to pursue. Many programs and researchers suggest that supporting the educational goals of SE/IPS participants is a natural outgrowth of providing these services and working from a person-centered perspective [18, 45]. In this manner, educational pursuits are considered a “pathway to work” but the integration of educational and vocational goals is also described as an age-appropriate offering, reflecting the changing priorities of these younger clients as they pursue their goals of establishing themselves as adults.

The term *career development*, which is often used in these contexts [1, 8, 9, 18, 36], includes concrete and continuous planning strategies which support the individual to find valued roles and a direction in life based on their interests and abilities as these evolve over time. The results suggest that career development goals may be supported by integrating SEd into an IPS service and that the diversity of outcomes that these integrated programs may produce, might be measured in relation to these long-term goals.

## Integrating the educational context

The majority of recent studies address both vocational and educational outcomes and describe a number of essential components related to supporting students in specifically educational contexts [3, 8, 9, 16]. Some examples include a focus on establishing connections with available educational actors and resources. Colleges and Universities are a given, but other educational organizations providing e.g. adult education, high school equivalency, vocational training, also appear to be central collaborators. These contacts with key collaborators in educational settings also point to the importance of student health services, school social workers, guidance counselors, and other partners meeting students in vulnerable life transitions. While these additional actors in the educational context have a wealth of knowledge and even access to specific resources, students describe the “pathway” to these types of supports as often challenging, sometimes bureaucratic and often stigmatizing (e.g. [5, 36]). Further research is suggested into developing

mental health literacy with existing educational resources who might additionally offer accommodations and supports not just for identified clients but to all students dealing with mental health problems.

Many studies describe the importance of mental health support through contact with traditional mental health services [29, 51] including community mental health centers, clubhouses and other types of rehabilitation-oriented supports that may be or could be actively supporting educational goals (e.g. [25, 40]). Studies additionally point to stress related to the demands of student life, social pressures, difficulties in staying motivated, and the issue of disclosure in seeking services and supports when attempting to establish themselves in the student role (e.g. [34, 39]). Attention to the contextual aspects of the student experience, including physical locations for studying, supports in developing routines and social structures, seems specific to student life, as opposed to worker roles which are often quite structured.

Based on the results discussed here, there are a number of recommendations for research and practice. The continued focus on developing integrated models as they most often address the needs of young adults is undoubtedly positive, but brings with it a number of challenges. These include attempting to clearly define the components and character of the educational supports as they are integrated into IPS services, in order to provide the most relevant supports, but also to allow for outcome studies that can contribute to the evidence base for educational supports [8, 9, 16, 18]. This is especially important since outcomes associated with integrated models seem to present an additional layer of complexity in terms of long-term benefits, in comparison with those of Supported employment models which can demonstrate immediate results. While a career orientation is extremely relevant from a recovery orientation for young adults with mental health problems, it can challenge issues of responsibility in public sector funding which are often short term. The focus on specific factors related to educational supports can also contribute to the relevance of IPS-based integrated models for these young adults. The review therefore suggests a need to look at work and studies as equally important and that knowledge gained from supported education services can contribute to the further development of integrated models for young adults.

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**Compliance with ethical standards**

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## Appendix

See the Table 3.

**Table 3** Summary of the included articles

| Authors (year) | Methodology | Target population | SEd models | Findings |
|---|---|---|---|---|
| Annapally et al. [3] | Mix methods-action research and case study | 14 students with SMD (age 18–28) | A need-based psychosocial rehabilitation intervention with SEd directed towards students and caregivers and academic institutions (18 components described). Helping factors to continue the academics for students and for academic reintegration are described | SEd was found to be feasible in helping students with SMDs to reintegrate into academics, improving their self-esteem, reducing their hindering factors, and improving their support system and helping factors. Six themes with sub-themes described expressed needs and challenges of the students with SMD |
| Annapally et al. [4] | Qualitative interviews | Mental health professionals' (n8), lecturers (n9) and students (n14) (age 18–28), diagnosed with SMDs' | Psychosocial rehabilitation intervention with SEd directed towards students and caregivers and academic institutions (18 components described) | A total of five barriers to academic reintegration were derived from data: 1. Illness and its treatment-related barriers, 2. Individual related barriers, 3. Family-related barriers, 4. Academic-related barriers and 5. Social barriers |
| Becker et al. [5] | Survey | Faculty members and students (age 18–34) | A project that planned and implemented a new SEd service as a university strategy for improving the educational environment of students with psychiatric disabilities | Data suggest that while most faculty and students have positive expectations for the success of students with mental illnesses, many survey respondents were not uniformly positive or knowledgeable about the subject, and reported that they lacked information about university services and benefits available to these students |
| Best et al. [7] | Program evaluation—follow up without control | 61 students (age 21–68) diagnosed with mental illness | SEd program based on self-contained classroom model. Classes were held at a post-secondary college or appropriate community setting. Students attend classes separate from mainstream classes. Course descriptions and identified key features of SEd that contributed to successful course completion are described. | The course completion rate was very close to the overall module completion rate for the general population of TAFE NSW students (72% vs. 77%). The authors strongly suggest that the supports and modifications provided in this SEd initiative can enable consumers to complete studies and reduce barriers to educational attainment |
| Biebel et al. [8] | Case study—single site visit of three SEd initiatives | 64 stakeholders/users across all three sites, 20/64 were individuals with SMHC pursuing education goals | Setting: (1) integrated care program for individuals experiencing FEP, including SEd guided by IPS principles, (2) community mental health setting that included SEd and SE (3) post-secondary education setting. Sites varied greatly in their adherence to defined models of SEd, as well as pathways for how students accessed SEd services | A description of differences and similarities across SEd sites are presented. The results suggest that SEd models can differ and still be very strong. Further research to identify and examine what core components support education goals and experiences across various settings is needed. |

**Table 3** continued

| Authors (year) | Methodology | Target population | SEd models | Findings |
|---|---|---|---|---|
| Biebel et al. [9] | Case study—qualitative focus groups | 15 students (age 16–30), currently enrolled in college/graduate school. Five adults (age over 30), currently enrolled, recently graduated, or on a temporary leave from college | Setting: (1) integrated care program for individuals experiencing FEP, including SEd guided by IPS principles, (2) community mental health setting that included SEd and SE (3) post-secondary education setting | Access to specialists, mindfulness techniques, help with time-management and procrastination, and facilitating classroom accommodations were identified as critical. Developing authentic relationships with SEd staff, flexibility in service delivery and access to student peers living with psychiatric disabilities were noted as key ingredients in service delivery |
| Bond et al. [11] | Systematic review | 28 longitudinal studies | Early intervention programs. For young adults with early psychosis. IPS has been expanded to include SEd as well as SE | SE moderately increases employment rates but not rates of enrolment in education. The lack of findings for educational outcomes surprises, given the importance of educational goals in this age group, but the field lacks an evidence-based model of SEd |
| Collins and Mowbray [13] | Survey | 275 public schools completed the survey. Wide range in number of students with psychiatric disabilities | Disability services offices at college and universities in 10 states | Survey data identified barriers to full participation for students with psychiatric disabilities in academic settings. Characteristics of Disability services offices, the types of services they provided and involvement of SEd in the services varied greatly |
| Corrigan et al. [14] | Survey | The educational goals survey (EGS) to 104 people from a large mental health center | No specific model or intervention | The sample had much lower level of educational achievement than the general population of adults in the U.S. Two sets of barriers emerged from the data; those which are consistent with any adult student and those which must be addressed because of disability. Reasons for returning to school included improving one´s job status and enhancing personal growth |
| Corrigan et al. [15] | Qualitative interviews | 44 participants including students with psychiatric disabilities, faculty, and staff | SEd included peer coaches who were college or university students in recovery, offering practical assistance in helping students currently challenged by psychiatric disabilities address the demands of academic life | Possible strength included helping navigate services, addressing sense of being alone, and managing school demands. Challenges included finding suited peers, addressing burnout, providing training and supervision, and matching coaches with students |

**Table 3** continued

| Authors (year) | Methodology | Target population | SEd models | Findings |
|---|---|---|---|---|
| Davids-Brumer and Kirsh [16] | Scoping review | 126 articles published from 1990–2018 | There are three primary models of service delivery for SEd described in the research: classroom, on-site and mobile support Implementation is often delivered in combination with SE or builds upon SE models | The amount of research in the SEd field has not increased substantially in nearly 30 years. An increase would contribute to the evolution of an evidence-based, effective and efficient approaches to SEd implementation. Work is needed to streamline SEd approaches and to unify the core interventions |
| Ellison et al. [18] | Survey–internet survey and telephone interviews | 31 programs that provided innovative career services, either or both educational and employment supports for young adults | Most programs offered SEd and SE along with mental health services. In programs unique to transition-aged youth, results showed great flexibility to adapt the services to better meet the needs that are unique to this age group | Barriers to employment and education for this age group were described. Detailed and written planning was a key feature. Programs emphasized working closely with families, inter-agency collaboration and use of normative community resources |
| Ellison et al. [17] | Feasibility study—follow up without control | 35 young adults (age 17–20) with a primary mood disorder diagnosis | The IPS model of SE was adapted for the population by integrating it with components of SEd, peer mentorship, and career development | Findings suggest that this is a feasible model. The adaptation is promising for a highly vulnerable population in which evidence-based practices that support vocational development are lacking |
| Ennals et al. [20] | Brief discussion of SEd | Young adults with mental illness | The article highlights the potential of modelling educational support on IPS-principles used in supported employment programs | The authors suggest that further research with young and adult populations is needed to establish those elements that are critical for improving the educational opportunities and educational/vocational pathways for people living with mental illness |
| Ennals et al. [19] | Meta-synthesis-16 studies from five countries | 231 participants in total, (age 18–65) with depression, psychotic disorders, bipolar disorders, anxiety disorders and personality disorders | No specific model/intervention—qualitative studies exploring post-secondary student experiences of studying while living with mental ill-health | Three interconnected processes shape the experience of being a postsecondary student living with mental ill-health: (a) Knowing and managing oneself and one's illness, (b) Negotiating the social space, and (c) Doing the academic work |
| Gutman [22] | RCT Brief report | 38 participants (age 19–55) with psychiatric diagnosis | The Bridge program (consisted of 12 classroom-lab modules (followed by an additional 6-week of mentoring), was implemented in the occupational therapy program at a university setting | The result suggested that the SEd program helped participants to increase their skill level in basic academic areas, improved professional behaviors and social skills needed for school and work, and gained confidence to test skills in the larger community |

**Table 3** continued

| Authors (year) | Methodology | Target population | SEd models | Findings |
|---|---|---|---|---|
| Gutman et al. [24] | Pilot study over 12 months—follow up without control | 18 participants with a diagnosis of mental illness | The Bridge program run for 12 weeks (one day per week) and included two hours of basic academic skill training followed by one hour of mentoring with an occupational therapy student at a university setting | 16/18 participants successfully completed the program, and 12 enrolled in further educational coursework. Upon program completion, most participants reported that they felt better prepared for future educational endeavors and felt more comfortable in the student role |
| Gutman et al. [23] | RCT—Pre- and post-program points, with follow-up at 1 and 6 months | 38 adults with psychiatric disabilities (age 19–55) | The bridge program ran twice per week for 6 weeks in the occupational therapy program of a large urban university | A significant number of participants were able to improve their academic skills, enhance professional behavior and social skills, and return to the school environment. 16/21 experimental group completed the program. At 6 months follow up, 10 had enrolled in an educational program, had obtained employment, or were applying to a specific program. Only 1 of the control group participants was enrolled in an educational program |
| Hain and Gioia [25] | Description of new intervention | Students (18 years or older) diagnosed with a psychiatric disability | SEd program (SEER) located on a community college campus as an integrated part of the college community. The program provides preparation of students prior to credit class enrollment | Information about program background and principal features of the SEER program, and the program's operations and community connections are described |
| Hartley [26] | Summary of literature | College students with psychiatric disabilities | Present ways that resilience research can be used to improve the retention of students with psychiatric disabilities in 2- and 4-year college | Risk factors (temporary cognitive impairment, stigma, poor academic self-confidence, conflicted peer relationships) and protective factors (active coping, peer support, counseling and psychosocial support, academic support and accommodations) in relation to college students with psychiatric disabilities are described |
| Humensky et al. [30] | Baseline-follow up without control | 65 individuals experiencing FEP (ages 15–35, average 21) | Recovery After an Initial Schizophrenia Episode (RAISE) Connection Program. Key features include Supported education and employment services (SEE). A full-time specialist trained in the IPS employment model and SEd delivery was integrated into each treatment team | Most participants who eventually engaged in vocational activities did so within the first year of participation. Many engaged in both school and work. Participants may need assistance in navigating school and work, as well as the transitions in between, to achieve their long-term goals |

**Table 3** continued

| Authors (year) | Methodology | Target population | SEd models | Findings |
|---|---|---|---|---|
| Humensky et al. [29] | Baseline-follow up without control | 799 individuals at baseline experiencing FEP (age 16–30) | OnTrackNY grew out of RAISE-IES model. OnTrackNY has designed the supported education and employment (SEE) service based on the IPS-principles | Participants who were younger and who had lower rates of school/work participation had greater odds of SEE service use. Rates of school and work participation increased over the duration of program participation |
| Isenwater et al. [31] | Follow up without control, mixed methods | 16 students with long term mental health problems. (Seven age 18–30, and nine above 30). 19 ex-students in the follow up study | The College Link Program (SEd initiative) is a part-time course for people with long-term mental health problems based in the community and constructed in a framework of rehabilitation for those who would not be able to manage or attend mainstream education | Most students who remained in the course for over 6 months found the course improved their self-esteem, interpersonal skills, confidence, independence and cognitive abilities. Participation seemed to reduce hospital admissions dramatically. |
| Killackey et al. [32] | Feasibility study - Baseline-follow up without control | 19 individuals with severe mental illness (age 15–19) | A public mental health service. Adapted IPS to focus on education (IPSed). Adapted IPS principles relevant for education and support delivered are described | IPS for education was found to be feasible with 95% of the participants who successfully completed the intervention. 18/19 who participated through to the conclusion of the intervention achieved positive educational outcomes |
| Knis-Matthews et al. [34] | Qualitative in-depth interviews | Four graduate students as partial fulfilment of their master's degree (age 34–54) who have been diagnosed with a mental illness | A private, non-profit, psychosocial day program that served adults over the age of 18. Classes at a postsecondary educational institution | The article describes supporting factors of both an academic and psychosocial nature that the students considered had played a vital role in helping them to overcome obstacles while studying. Education helped the students to find a sense of purpose in their lives and was described as a means of transition from the patient role to other roles such as student or worker |
| Lövgren et al. [36] | Qualitative focus groups and individual interviews | Service users (n8), education specialists and job coaches (n20), Representatives of mental health services (n9), educational services (n13), employment services (n6), and user groups associations (n1) | Varied models including integrated with IPS/SE, Fountain House, free-standing SEd | Results suggest a number of key factors for accommodating the needs of students with mental health problems. In addition to basic academic, mental health and individual support, attention to economic challenges, social context and improved mental health literacy for educational actors. Educational support is relevant to long-term vocational goals when providing employment services |

**Table 3** continued

| Authors (year) | Methodology | Target population | SEd models | Findings |
| --- | --- | --- | --- | --- |
| Mansbach-Kleinfeld et al. [37] | Qualitative in depth interviews + letters written by students | 12 adult students with psychiatric disabilities who had successfully completed their studies in the context of the SEP in Israel | Based on local needs, a SEd program (SEP) was developed, offered educational completion opportunities such as Hebrew language courses (for recent immigrants), grade, high school and higher education programs, and computer courses. The program and courses with a duration between 3-6 months were available in a community high school for adult education. | The study identified values and needs that education in general, and SEd in particular, fulfill for people with psychiatric disabilities<br>Individual abilities and support reported as useful by the students were; hard work and personal efforts, facilitating structural elements of the program, social support from family, friends and significant others. |
| Manthey et al. [38] | Summary of literature | Individuals with psychiatric disabilities | Supported education as an intervention based on the 4 primary models, wide variability in implementation and organisations | Educational barriers faced by individuals with psychiatric disabilities were difficulty funding programs, difficulty funding students, difficulty funding research |
| Manthey et al. [39] | Survey | Supervisors of SE programs with a separate educational program or unit | SEd services provided within IPS programs, or other employment programs providing a separate educational unit or service | Perceived importance of program elements is described. The SEd characteristic rated highest in importance had to do with zero exclusion and assertive outreach indicating that respondents see a need for increasing the number of consumers enrolled in SEd. Integration of IPS and SEd programs appears a promising strategy |
| Megivern et al. [40] | Descriptive-provides the grassroots history and describes the components of this SEd program | Individuals with psychiatric disabilities | Consumers and alliances united for supported education (CAUSE). The program is based at a mental health center, but staff members also regularly keep office hours at other sites, including colleges/ universities and local clubhouses | A description of processes for empowering individuals to pursue educational goals and important collaborators. Narratives from users of Supported education are presented |
| Mowbray et al. [43] | Descriptive—describe efforts to replicate a SEd program | Adults with psychiatric disabilities who wish to study | The planning approach was intended to encourage adaptations of the SEd model based on community needs, to enhance investment of resources from all interested parties, and to maximize local support. SEd combining elements of individual and group support, and curriculum-based models | The sites provided career exploration, tutoring, individual and group support, educational resources, skill building for academic survival, and stress/time management. All sites sought to obtain program space from their local college and planned to provide access to educational resource centers. Description of implementation strategies and lessons learned |

**Table 3** continued

| Authors (year) | Methodology | Target population | SEd models | Findings |
|---|---|---|---|---|
| Mowbray et al. [44] | Program evaluation<br>Follow-up without control | 397 individuals in 4 cohorts (age 17-75, mean 36.9). Participants experienced mental illness | SEd offered its (noncredit) services on a community college campus, with the goal of helping participants establish an educational or vocational plan, access support and resources for the plan, determine career goals, and cope with specific problems presented by psychiatric disabilities in academic or vocational environments | The top three information items reported as most helpful were; applying for college, financial aids, and types of counselling available on campus. The three barriers with the highest endorsement rates were commuting to campus, applying for financial aid, and concentrating in class. Most frequent cited personal difficulties were financial need and mental illness |
| Mowbray et al. [45] | Summary of literature—overview of SEd principles, services, models and evaluations | Adults with psychiatric disabilities | Core services and support provided, history and expansion and outcomes from evaluations of SEd programs are described | Findings of the effectiveness of SEd, based on research and evaluation studies, is provided |
| Mowbray et al. [46] | Description and comparison of two different SEd programs located in the USA and the Netherlands | Individuals receiving service from public mental health system | SED utilized on College campus. Classroom, on-site and mobile support | Implementation varied, reflecting adaptation to particular national circumstances and local needs. The many similarities identified indicated the robustness of SEd across varying context and populations, suggesting that it may be a model worth replicating in many different locations and cultures. |
| Mowbray et al. [48] | Summary of literature | Students with serious mental illness | University setting | The authors summarize literature on the types and extent of mental health problems on campus, summarize information concerning challenges in meeting the needs of these students and the reasons why universities should address the problem of serious mental illness |
| [42] | Summary of six selected Sed programs | Average age was 32–39, the age range across all programs varied from 17 to 77. Reported diagnoses of students was an additional source of variation | Programs differed in the specific services and activities provided. This was also to be expected, since characteristics and needs of consumers differed across locations and settings, as did available resources to meet the needs | The types of consumers they served, and these consumers' needs were more diverse than similar. Essential ingredients in SEd were: Normalization, self-determination, Support and relationships, Hope and recovery, and system change |

**Table 3** continued

| Authors (year) | Methodology | Target population | SEd models | Findings |
|---|---|---|---|---|
| Mowbray et al. [47] | Survey National survey of all known SEd programs | 103 SEd programs were identified; Clubhouses (n69), college/universities (n8) and other programs (n26) | There were significant differences in the variety and scope of program offerings. Descriptions of the different programs are described | The largest numbers of SEd programs was associated with clubhouses, where full and partial SEd-models could be identified. On-site SEd programs were located in community college and universities. A dozen "free standing" programs were also identified |
| Mueser et al. [49] | Literature review-cover recent research on the IPS model | People with serious mental illness | People with FEP often have educational goals, which have led to a resurging interest in SEd, often combined with SE. | Evaluations of specialized early psychosis programs with SE/SEd have reported significant increases in work or school involvement. Employment and educational outcomes have sometimes been mixed, complicating the interpretations |
| Murphy et al. [50] | Summary of literature | People with psychiatric disabilities | This article proposes the addition of two service enhancements to the IPS model-to increase job tenure | Individuals with truncated educational histories only qualify for entry-level positions that are short term by nature. The article outlines the potential for two approaches that would enhance the current IPS model; natural support networks and SEd |
| Nuechterlein et al. [51] | Initial RCT | 87 Individuals with a recent onset of psychotic illness. The mean age at study entry was 25.2 years | Principles of IPS were extended to include supported education, including initial goal evaluation, the IPS-specialist working on placement with the participant or directly with educational and employment settings, follow along support, study skills, course planning. | Findings showed that IPS principles can be successfully extended to integrate SEd and SE within one treatment program. Participants in the IPS condition had returned to school, competitive work, and combined school and work with approximately equal frequency |
| Nuechterlein et al. [52] | RCT | 69 participants experiencing recent-onset schizophrenia | IPS was adapted to meet the needs of individuals whose goals might involve either employment or schooling, by adapting SEd to meet the standards of IPS fidelity | Combination led to 83% of patients participating in competitive employment or school in the first 6 months, compared with 41% in the comparison group and clearly supported the efficacy of an enhanced intervention focused on recovery of participants in normative work and school settings, in the initial phase of schizophrenia |
| Rinaldi et al. [57] | Program evaluation—Baseline-follow up without control | 166 participants experiencing FEP (age 17–32) | IPS adapted to include SEd within an early intervention team for young people with FEP | This study suggests that the IPS approach combined with SEd was effective at enabling a significant proportion of young people with FEP in a UK service to gain/retain open employment and mainstream education |

**Table 3** continued

| Authors (year) | Methodology | Target population | SEd models | Findings |
|---|---|---|---|---|
| Ringeisen et al. [59] | Mix method-data from three sources were synthesized: published literature 1990–2014, an environmental scan and three site visits | No specific target group specified—broadly focused on people with psychiatric disabilities | Setting, target populations, level of coordination with supported employment, and financing strategies varied. The authors suggest that continued specification, operationalization, and testing of SEd core components are needed | Common SEd components were specialized and dedicated staffing, one-on-one and group skill-building activities, assistance with navigating the academic setting and coordinating services, linkages with mental health counseling. Rigorous testing suggested to evaluate impact of components on degree completion, employment, health, mental health, recovery and community participation |
| Robson et al. [60] | Program evaluation—Baseline-follow up without control | 20 participants (mean age 25.8) diagnosed with mental illness | Principles of the SEd program coordinated with a larger SE program in a community mental health service | Education outcomes were promising, with 70% of service users either continuing or completing their chosen course of formal study. Applying IPS principles to the delivery of the individualized SEd program seemed to help clients to access both types of service according to their career progress and their changing priorities |
| Rosenheck et al. [62] | RCT Secondary analysis of data from the RAISE-ETP | 404 individuals (age 15–40) recovering from FEP | A comprehensive, team based FEP treatment approach including Supported education and employment (SEE), based on principles of the IPS-model | A comprehensive, team based FEP treatment approach was associated with greater improvement in work or school participation over two-years compared to those who received usual community care. |
| Rudnick et al. [63] | Case study—mixed methods baseline-follow up without control (12 months) | 37 participants (age 19–53, mean 32.5) with mental illness. 6/37 participants and 7 significant others/councilors were interviewed | The intervention consisted of SEd and the IPS-model at a college | The integration of SEd and SE was helpful in mitigating challenges and severity of symptoms faced by the students. Identified barriers were Stigma, discrimination and exclusion, and personal stressors. SEd had positive influences on self-esteem, self-confidence and empowerment, motivation and hope. Needs/barriers identified were Need for skill development, lack of knowledge about mental illness of staff and lack of effective communication, and support systems |

**Table 3** continued

| Authors (year) | Methodology | Target population | SEd models | Findings |
|---|---|---|---|---|
| Russell and Strauss [64] | Descriptive | Most have diagnoses of bipolar and schizophrenia spectrum disorders. Service specifically relevant to students 18–26 years old | The service, Career Advancement Resources (CAR) provides employment training and SEd and utilizes full- and part time staff, on-campus resources and peers/mentors | Core services of car's SEd program are presented according to the choose-get-keep model. Internal and external barriers are described |
| Sasson et al. [65] | Descriptive-presentation of a SEd program and initial findings from two other studies related to this program | Individuals diagnosed with schizophrenia (age 18–63) | Courses conducted in a community high school for adult education. Duration of courses was 3–6 months, twice weekly | The responses of their students, psychiatric staff and family members showed that the intervention improved self-respect, general functioning, coping with stress and perception of social support |
| Schindler [66] | Baseline-follow up without control mix method | 48 participants with various mental health diagnoses completed a quantitative questionnaire and 29 of those participated in qualitative focus groups | The program incorporates principles of SEd and SE and is directed and supervised by Occupational therapy faculty in a university setting | Positive aspects were mentoring, achieving goals, learning new skills, social interactions, modules, and positive feeling about oneself. Negative aspects were mentoring, modules, self/self-sabotaging, to short duration of the program. Results supported that an OT program incorporating principles of SEd and employment can assist individuals with mental illness to achieve higher education and employment goals |
| Schindler and Sauerwald [67] | Baseline-follow up without control-mixed methods | 48 adult participants with various mental health diagnoses | The Bridge Program was developed by a master's level occupational therapy program faculty | Participants enrolled in higher education increased from 7 to 11, participants employed increased significantly from 5 to 19, and combined category of higher education/employment increased significantly from 12 to 30. Results support that an OT program incorporating principles of SEd and employment can assist individuals with mental illness to achieve higher education and employment goals |

**Table 3** continued

| Authors (year) | Methodology | Target population | SEd models | Findings |
|---|---|---|---|---|
| Shor [69] | Survey | 80 university students with severe mental illness | University setting | Students' difficulties that were ranked the highest were "Learning skills and management of academic tasks" and "Social inclusion difficulties." Inverse relationships were found between the students' difficulties and their perceived level of recovery. Students' difficulties may not be limited to academic functioning. There is a need to broaden the view of students' difficulties to include social and contextual factors in the university environment |
| Soydan [70] | Descriptive-a brief history and overview of SEd | Individuals with psychiatric disabilities | Key values and principles of psychiatric rehabilitation are presented as the essence of SEd | Key values and principles of psychiatric are person orientation, focus on performance in everyday activities, support as long as needed, environmental specificity, involvement, choice, outcome orientation and growth potential |
| Unger and Pardee [71] | Baseline-follow up without control brief report | Students with psychiatric disabilities were followed for five semesters | A mental health center (CAUSE), a clubhouse, and a community college. Each embraced the philosophy and practice of SEd | Education outcomes for all students in the study indicate that people with a mental disorder can complete college credits and achieve good grades |
| Unger et al. [72] | Baseline-follow up without control | 105 students with mental illness remained in the study throughout the five semesters | A mental health program (CAUSE), a community college program, and a clubhouse program, all with SEd | Students with psychiatric disorders can attend postsecondary education and complete their courses. Half of the students who completed their educational goal held jobs that reflected their education level. There were no significant changes in either quality of life or self-esteem |
| Waghorn et al. [73] | Survey, summary of literature and description of a program | A large national survey. Age was restricted to 15-64 years, yielding a sub-sample of 25,217 persons of whom 169 had psychosis | A group based SEd program was developed in response to the educational and vocational needs of consumers in an early psychosis Intervention program, utilized a self-contained classroom model | The findings showed that psychosis is associated with education disruption is consistent with other evidence that the onset of psychotic or other psychiatric disorders truncates educational attainment. Ten features of SEd programs emerged that appear to have potential applications in Australia. |
| Weiss et al. [75] | Descriptive-a particular SEd program | Not specified – but focused on psychiatric rehabilitation clubhouse members | Tri-County Scholars focuses on the development of academic and related social skills via a clubhouse support model and a classroom academic support model within a mainstream college environment | Satisfaction surveys, focus groups, and individual interviews revealed positive feelings among participants. The article describes course content for a two-semester program: basic student skills and basic study skills |

## References

Publications marked with an asterisk (*) are included in the review


1. Akinola O, Dunkley L. Employment and education interventions targeting transition-age youth with mental health conditions: a synthesis. J Psychosoc Rehab Men Health. 2019;6:75–92. https://doi.org/10.1007/s40737-019-00136-w.
2. Arksey H, O'Malley L. Scoping studies: towards a methodological framework. Int J Res Methodol. 2005;8(1):19–32. https://doi.org/10.1080/1364557032000119616.
3. *Annapally SR, Jagannathan A, Kishore T, Daliboina M, Kumar CN. Feasibility testing of a supported education programme for students with severe mental disorders. Int J Soc Psychiatry. 2020. https://doi.org/10.1177/0020764020926224.
4. *Annapally SR, Jagannathan A, Kishore T, Thirthalli J, Daliboina M, Channaveerachari NK. Barriers to academic reintegration in students with severe mental disorders: thematic analysis. Asian J Psychiatry. 2019;45:107–12. https://doi.org/10.1016/j.ajp.2019.09.010.
5. *Becker M, Martin L, Wajeeh E, Ward J, Shern D. Students with mental illness in a university setting: faculty and student attitudes, beliefs, knowledge, and experiences. Psychiatr Rehabil J. 2002;25(4):359–68. https://doi.org/10.1037/h0095001.
6. Bejerholm U, Areberg C, Hofgren C, Sandlund M, Rinaldi M. Individual placement and support in Sweden—a randomized controlled trial. Nord J Psychiatry. 2015;69(1):57–66. https://doi.org/10.3109/08039488.2014.929739.
7. *Best LJ, Still M, Cameron G. Supported education: enabling course completion for people experiencing mental illness. Aust Occup Ther J. 2008;55(1):65–8. https://doi.org/10.1111/j.1440-1630.2007.00690.x.
8. *Biebel K, Mizrahi R, Ringeisen H. Postsecondary students with psychiatric disabilities identify core services and key ingredients to supporting education goals. Psychiatr Rehabil J. 2018;41(4):299–301. https://doi.org/10.1037/prj0000280.
9. *Biebel K, Ryder-Burge A, Alikhan S, Ringeisen H, Ellison M. Strategies to support the education goals of youth and young adults with serious mental health conditions: a case study. Adm Policy Ment Health Men Health Serv Res. 2018;45(4):661–71. https://doi.org/10.1007/s10488-018-0852-3.
10. Bond GR, Drake RE, Becker DR. An update on randomized controlled trials of evidence-based supported employment. Psychiatr Rehabil J. 2008;31(4):280–90. https://doi.org/10.2975/31.4.2008.280.290.
11. *Bond GR, Drake RE, Luciano A. Employment and educational outcomes in early intervention programmes for early psychosis: a systematic review. Epidemiol Psychiatr Sci. 2015;24(5):446–57. https://doi.org/10.1017/S2045796014000419.
12. Burke-Miller J, Razzano LA, Grey DD, Blyler CR, Cook JA. Supported employment outcomes for transition age youth and young adults. Psychiatr Rehabil J. 2012;35(3):171–9. https://doi.org/10.2975/35.3.2012.171.179.
13. *Collins ME, Mowbray CT. Higher education and psychiatric disabilities: national survey of campus disability services. Am J Orthopsychiatry. 2005;75(2):304–15. https://doi.org/10.1037/0002-9432.75.2.304.
14. *Corrigan PW, Barr L, Driscoll H, Boyle MG. The educational goals of people with psychiatric disabilities. Psychiatr Rehabil J. 2008;32(1):67–70. https://doi.org/10.2975/32.1.2008.67.70.
15. *Corrigan PW, Sheehan L, Walley G, Qin S, Nieweglowski K, Maurer K. Strengths and challenges of peer coaches for supported education in colleges and universities. Psychiatr Rehabil J. 2020;43(3):175–8. https://doi.org/10.1037/prj0000390.
16. *Davids-Brumer N, Kirsh B. Supported education: a scoping review. Int J Psychosoc Rehabil. 2018;22(2):58–79.
17. *Ellison ML, Klodnick VV, Bond GR, Krzos IM, Kaiser SM, Fagan MA, et al. Adapting supported employment for emerging adults with serious mental health conditions. J Behav Health Serv Res. 2015;42(2):206–22. https://doi.org/10.1007/s11414-014-9445-4.
18. *Ellison ML, Huckabee SS, Stone RA, Sabella K, Mullen MG. Career services for young adults with serious mental health conditions: innovations in the field. J Behav Health Serv Res. 2019;46(1):1–14. https://doi.org/10.1007/s11414-018-9638-3.
19. *Ennals P, Fossey E, Howie L. Postsecondary study and mental ill-health: a meta-synthesis of qualitative research exploring students' lived experiences. J Men Health. 2015;24(2):111–9. https://doi.org/10.3109/09638237.2015.1019052.
20. *Ennals P, Fossey EM, Harvey CA, Killackey E. Postsecondary education: kindling opportunities for people with mental illness. Asia-Pac Psychiatry. 2014;6(2):115–9. https://doi.org/10.1111/appy.12091.
21. Grant MJ, Booth A. A typology of reviews: an analysis of 14 review types and associated methodologies. Health Inf Libr J. 2009;26(2):91–108. https://doi.org/10.1111/j.1471-1842.2009.00848.x.
22. *Gutman SA. Supported education for adults with psychiatric disabilities. Psychiatr Serv. 2008;59(3):326–7.
23. *Gutman SA, Kerner R, Zombek I, Dulek J, Ramsey CA. Supported education for adults with psychiatric disabilities: effectiveness of an occupational therapy program. Am J Occup Ther. 2009;63(3):245–54. https://doi.org/10.5014/ajot.63.3.245.
24. *Gutman SA, Schindler VP, Murphy KA, Klein K, Lisak JM, Durham DP. The effectiveness of a supported education program for adults with psychiatric disabilities the bridge program. Occup Ther Men Health. 2007;23(2):21–38. https://doi.org/10.1300/J004v23n01_02.
25. *Hain R, Gioia D. Supported education enhancing rehabilitation (SEER): a community mental health and community college partnership for access and retention. Am J Psychiatr Rehabil. 2004;7(3):315–28. https://doi.org/10.1080/15487760490884711.
26. *Hartley MT. Increasing resilience: strategies for reducing dropout rates for college students with psychiatric

disabilities. Am J Psychiatr Rehabil. 2010;13(4):295–315. https://doi.org/10.1080/15487768.2010.523372.

27. Harkko J, Virtanen M, Kouvonen A. Unemployment and work disability due to common mental disorders among young adults: selection or causation? Eur J Public Health. 2018;28(5):791–7. https://doi.org/10.1093/eurpub/cky024.
28. *Hsieh HF, Shannon SE. Three approaches to qualitative content analysis. Qual Health Res. 2005;15(9):1277–88. https://doi.org/10.1177/1049732305276687.
29. *Humensky JL, Nossel I, Bello I, Dixon LB. Supported education and employment services for young people with early psychosis in ontrackny. J Men Health Policy Econ. 2019;22(3):95–108.
30. *Humensky JL, Essock SM, Dixon LB. Characteristics associated with the pursuit of work and school among participants in a treatment program for first episode of psychosis. Psychiatr Rehabil J. 2017;40(1):108–12. https://doi.org/10.1037/prj0000256.
31. *Isenwater W, Lanham W, Thornhill H. The college link program: evaluation of a supported education initiative in Great Britain. Psychiatr Rehabil J. 2002;26(1):43–50.
32. *Killackey E, Allott K, Woodhead G, Connor S, Dragon S, Ring J. Individual placement and support, supported education in young people with mental illness: an exploratory feasibility study. Early Interv Psychiatry. 2017;11(6):526–31. https://doi.org/10.1111/eip.12344.
33. Kinoshita Y, Furukawa TA, Kinoshita K, Honyashiki M, Omori IM, Marshall M, et al. Supported employment for adults with severe mental illness. Cochrane Database Syst Rev. 2013;9:Cd008297. https://doi.org/10.1002/14651858.CD008297.pub2.
34. *Knis-Matthews L, Bokara J, DeMeo L, Lepore N, Mavus L. The meaning of higher education for people diagnosed with a mental illness: four students share their experiences. Psychiatr Rehabil J. 2007;31(2):107–14. https://doi.org/10.2975/31.2.2007.107.114.
35. Levac D, Colquhoun H, O'Brien KK. Scoping studies: advancing the methodology. Implement Sci. 2010;5(1):69.
36. *Lövgren V, Hillborg H, Bejerholm U, Rosenberg D. Supported education in a Swedish context—opportunities and challenges for developing career-oriented support for young adults with mental health problems. Scand J Disabil Res. 2020;22(1):1–11. https://doi.org/10.16993/sjdr.648.
37. *Mansbach-Kleinfeld I, Sasson R, Shvarts S, Grinshpoon A. What education means to people with psychiatric disabilities: a content analysis. Am J Psychiatr Rehabil. 2007;10(4):301–16. https://doi.org/10.1080/15487760701680554.
38. *Manthey TJ, Goscha R, Rapp C. Barriers to supported education implementation: implications for administrators and policy makers. Adm Policy Men Health Men Health Serv Res. 2015;42(3):245–51. https://doi.org/10.1007/s10488-014-0583-z.
39. *Manthey TJ, Holter MC, Rapp CA, Davis JK, Carlson L. The perceived importance of integrated supported education and employment services. J Rehabil. 2012;78(1):16–24.
40. *Megivern D, Anderson K, Wentworth VR, Barnhart V, Howard S. Consumers and alliances united for supported education (CAUSE): building and maintaining successful collaborative relationships. Am J Psychiatr Rehabil. 2004;7(3):265–79. https://doi.org/10.1080/15487760490884559.
41. Modini M, Tan L, Brinchmann B, Wang MJ, Killackey E, Glozier N, et al. Supported employment for people with severe mental illness: systematic review and meta-analysis of the international evidence. Br J Psychiatry. 2016;209(1):14–22. https://doi.org/10.1192/bjp.bp.115.165092.
42. *Mowbray CT. Supported Education: diversity, essential ingredients, and future directions. Am J Psychiatr Rehabil. 2004;7(3):347–62. https://doi.org/10.1080/15487760490884739.
43. *Mowbray CT, Bellamy CD, Megivern D, Szilvagyi S. Raising our sites: dissemination of supported education. J Behav Health Serv Res. 2001;28(4):484–91. https://doi.org/10.1007/BF02287778.
44. *Mowbray CT, Bybee D, Collins ME. Follow-up client satisfaction in a supported education program. Psychiatr Rehabil J. 2001;24(3):237–47. https://doi.org/10.1037/h0095088.
45. *Mowbray CT, Collins ME, Bellamy CD, Megivern DA, Bybee D, Szilvagyi S. Supported education for adults with psychiatric disabilities: an innovation for social work and psychosocial rehabilitation practice. Soc Work. 2005;50(1):7–20. https://doi.org/10.1093/sw/50.1.7.
46. *Mowbray CT, Korevaar L, Bellamy CD. Supported education: an innovation in psychiatric rehabilitation practice: results from the United States and the Netherlands. Can J Commun Men Health. 2002;21(2):111–29.
47. *Mowbray CT, Megivern D, Holter MC. Supported education programming for adults with psychiatric disabilities: results from a national survey. Psychiatr Rehabil J. 2003;27(2):159–67. https://doi.org/10.2975/27.2003.159.167.
48. *Mowbray CT, Megivern D, Mandiberg JM, Strauss S, Stein CH, Collins K, et al. Campus mental health services: recommendations for change. Am J Orthopsychiatry. 2006;76(2):226–37. https://doi.org/10.1037/0002-9432.76.2.226.
49. *Mueser KT, Drake RE, Bond GR. Recent advances in supported employment for people with serious mental illness. Curr Opin Psychiatry. 2016;29(3):196–201. https://doi.org/10.1097/YCO.0000000000000247.
50. *Murphy AA, Mullen MG, Spagnolo AB. Enhancing individual placement and support: promoting job tenure by integrating natural supports and supported education. Am J Psychiatr Rehabil. 2005;8(1):37–61. https://doi.org/10.1080/15487760590953948.
51. *Nuechterlein KH, Subotnik KL, Turner LR, Ventura J, Becker DR, Drake RE. Individual placement and support for individuals with recent-onset schizophrenia: integrating supported education and supported employment. Psychiatr Rehabil J. 2008;31(4):340–9. https://doi.org/10.2975/31.4.2008.340.349.
52. *Nuechterlein KH, Subotnik KL, Ventura J, Turner LR, Gitlin MJ, Gretchen-Doorly D, et al. Enhancing return to work or school after a first episode of schizophrenia: the UCLA RCT of individual placement and support and workplace fundamentals module training. Psychol Med. 2020;50(1):20–8. https://doi.org/10.1017/S0033291718003860.

53. Patel V, Flisher AJ, Hetrick S, McGorry P. Mental health of young people: a global public-health challenge. Lancet. 2007;369(9569):1302–13. https://doi.org/10.1016/S0140-6736(07)60368-7.
54. Peters MDJ, Godfrey C, Khalil H, McInerney P, Parker D, Soares CB. Guidance for conducting systematic scoping reviews. Int J Evid Based Healthc. 2015;13(3):141–6. https://doi.org/10.1097/XEB.0000000000000050.
55. Peters MDJ, Godfrey C, McInerney P, Baldini Soares C, Khalil H, Parker D. Chapter 11: scoping reviews. In: Aromataris E, Munn Z, editors. Joanna briggs institute reviewer's manual. Adelaide: The Joanna Briggs Institute; 2017.
56. Priestley M. Disability: a life course approach. Cambridge: Polity; 2003.
57. Rinaldi M, Miller L, Perkins R. Implementing the individual placement and support (IPS) approach for people with mental health conditions in England. Int Rev Psychiatry. 2010;22(2):163–72. https://doi.org/10.3109/09540261003720456.
58. *Rinaldi M, Perkins R, McNeil K, Hickman N, Singh SP. The individual placement and support approach to vocational rehabilitation for young people with first episode psychosis in the UK. J Ment Health. 2010;19(6):483–91. https://doi.org/10.3109/09638230903531100.
59. *Ringeisen H, Langer Ellison M, Ryder-Burge A, Biebel K, Alikhan S, Jones E. Supported education for individuals with psychiatric disabilities: state of the practice and policy implications. Psychiatr Rehabil J. 2017;40(2):197–206. https://doi.org/10.1037/prj0000233.
60. *Robson E, Waghorn G, Sherring J, Morris A. Preliminary outcomes from an individualised supported education programme delivered by a community mental health service. Br J Occup Ther. 2010;73(10):481–6. https://doi.org/10.4276/030802210X12865330218384.
61. Rogers ES, Kash-MacDonald M, Bruker D, Maru M. Systematic review of supported education literature, 1989–2009. Boston: Boston University, Sargent College, Center for Psychiatric Rehabilitation; 2010.
62. *Rosenheck R, Mueser KT, Sint K, Lin H, Lynde DW, Glynn SM, et al. Supported employment and education in comprehensive, integrated care for first episode psychosis: effects on work, school, and disability income. Schizophr Res. 2017;182:120–8. https://doi.org/10.1016/j.schres.2016.09.024.
63. *Rudnick A, McEwan RC, Pallaveshi L, Wey L, Lau W, Alia L, et al. Integrating supported education and supported employment for people with mental illness: a pilot study. Int J Psychosoc Rehabil. 2013;18(1):5–25.
64. *Russell AC, Strauss S. Career advancement resources (CAR): supported education as a career development strategy. Am J Psychiatr Rehabil. 2004;7(3):249–64. https://doi.org/10.1080/15487760490884540.
65. *Sasson R, Grinshpoon A, Lachman M, Ponizovsky A. A program of supported education for adult Israeli students with schizophrenia. Psychiatr Rehabil J. 2005;29(2):139–41. https://doi.org/10.2975/29.2005.139.141.
66. *Schindler VP. Service user perception of and satisfaction with programs having higher education and employment goals for people diagnosed with mental illness. Occup Ther Men Health. 2018;34(4):347–66. https://doi.org/10.1080/0164212X.2017.1419900.
67. *Schindler VP, Sauerwald C. Outcomes of a 4-year program with higher education and employment goals for individuals diagnosed with mental illness. Work J Prev Assess Rehabil. 2013;46(3):325–36. https://doi.org/10.3233/WOR-121548.
68. Schön UK, Rosenberg D. Transplanting recovery: research and practice in the Nordic countries. J Men Health. 2013;22(6):563–9. https://doi.org/10.3109/09638237.2013.815337.
69. *Shor R. Difficulties experienced by university students with severe mental illness who participate in supported education programs. Commun Ment Health J. 2017;53(3):281–7. https://doi.org/10.1007/s10597-016-0026-2.
70. *Soydan AS. Supported eeducation: a portrait of a psychiatric rehabilitation intervention. Am J Psychiatr Rehabil. 2004;7(3):227–48. https://doi.org/10.1080/15487760490884531.
71. *Unger KV, Pardee R. Outcome measures across program sites for postsecondary supported education programs. Psychiatr Rehabil J. 2002;25(3):299–303. https://doi.org/10.1037/h0095012.
72. *Unger KV, Pardee R, Shafer MS. Outcomes of postsecondary supported education programs for people with psychiatric disabilities. J Vocat Rehabil. 2000;14(3):195–9.
73. *Waghorn G, Still M, Chant D, Whiteford H. Specialised supported education for Australians with psychotic disorders. Aust J Soc Issues. 2004;39(4):443–58. https://doi.org/10.1002/j.1839-4655.2004.tb01193.x.
74. Winberg K, Bertilsdotter Rosqvist H, Rosenberg D. Inclusive spaces in post-secondary education–exploring the experience of educational supports for people with a neuropsychiatric disability. Int J Incl Educ. 2019;23(12):1263–76. https://doi.org/10.1080/13603116.2018.1445303.
75. *Weiss J, Maddox D, Vanderwaerden M, Szilvagyi S. The tri-county scholars program: bridging the clubhouse and community college. Am J Psychiatr Rehabil. 2004;7(3):281–300. https://doi.org/10.1080/15487760490884676.

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