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A Survey of Evidence-Based Practise among Dutch Occupational Therapists

Carola M. E. Döpp[1,2*†], Esther M. J. Steultjens[3] & Jeff Radel[1]

[1]University of Kansas Medical Center, Kansas City, Kansas, USA

[2]Radboud University Nijmegen Medical Center, Scientific Institute for Quality of Healthcare, Nijmegen, The Netherlands

[3]Ergologie, Zeist, The Netherlands

Abstract

This study explored how the evidenced-based practise (EBP) is perceived by Dutch occupational therapists (OTs), what sources of research data are used to make clinical decisions, and what barriers are identified in implementing EBP.

A self-administered, pre-tested, questionnaire was distributed through an email survey and postal mail among the 200 randomly stratified selected OTs out of a total population of 2,019 Dutch OTs. Analyses of data comprised descriptive statistics of all variables and test statistics to evaluate the differences between demographical groups.

Dutch OTs have a very positive attitude toward the EBP. Barriers experienced are mostly related to a lack of skills needed to implement the EBP and to the characteristics of the work environment. The attitude, experiences and barriers are mainly similar to research findings in other countries or professions. A unique barrier to the implementation of the EBP found in this study was that Dutch OTs perceived evidence written in a foreign (non-Dutch) language as a barrier to using evidence in non-Dutch languages.

The results of the study, derived from a partly representative group of working OTs, implicate universal problems regarding the effective implementation of the EBP. Solutions to increase the implementation of the EBP from an international point of view are called for and need to be evaluated.

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Keywords

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***Correspondence**

Carola M. E. Döpp, M.Sc. OT, Scientific Institute for Quality of Healthcare (IQ healthcare), Radboud University Nijmegen Medical Center, Postbus 9101, 114 IQ healthcare, 6500 HB Nijmegen, The Netherlands

[†]Email: cme_dopp@hotmail.com

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The evidence-based practise (EBP) became a topic of discussion within the occupational therapy (OT) profession starting around 1997 when one of the earlier articles on the use of the EBP in OT was written by (Taylor, 1997). The EBP refers to the clinical decision making based on a combination of knowledge from current research evidence, the clinical expertise of occupational therapists (OTs) and the knowledge regarding values and preferences of the client (Sackett et al., 2000; Kuiper et al., 2004). The EBP establishes a treatment alliance that optimizes clinical outcomes and the quality of life for clients (Sackett et al., 2000). Sources of evidence vary in the degree of credibility, with randomized controlled trails providing the best

source of evidence regarding the efficacy of interventions and opinions of experts or peers being the least robust source of evidence (Law & Philp, 2002). Communicating about the evidence with clients also is an essential part of the EBP process in OT (Tickle-Degnen, 1998, 2000).

Studies evaluating the use of the EBP among OTs in different countries have documented a variety of factors related to characteristics of the workplace, of professionals, of the research evidence and/or the accessibility and presentation of evidence.

A survey conducted among OTs from seven different National Health Service (NHS) trusts in the UK (Humphris et al., 2000) was completed by 66 OTs (response rate from 78%) and showed that the barriers experienced by most of the respondents included workload pressure, insufficient staff resources and a lack of understanding the research evidence. Two additional survey studies on the EBP among UK therapists were conducted. Curtin and Jaramazovic (2001) reported the results of a survey completed by 500 OTs (response rate: 76,6%). They found that a lack of appropriate resources, a lack of good quality research, a large workload, insufficient staff turnover and a lack of training and knowledge to implement the EBP were the most important barriers (Curtin & Jaramazovic, 2001). A survey completed by the 125 members of the National Association of Neurological Occupational Therapists in the UK (response rate 62,5%) (Sweetland & Craik, 2001) showed that a large proportion of the OTs perceived a lack of relevance of the evidence to be a major barrier. All UK studies reported that a lack of time was a major barrier in implementing the EBP (Humphris et al., 2000; Curtin & Jaramazovic, 2001; Sweetland & Craik, 2001).

A study among 105 Scottish healthcare professionals working in stroke rehabilitation included 27 OTs of which 26 responded to a survey on the EBP (Pollock et al., 2000). The results showed that the majority of the OTs had a need for further training in critical appraisal of the evidence and experienced difficulty in both keeping up to date with the literature in combination with patient care and transferring research findings to clinical practise. In addition, OTs were not confident about the reliability of research findings and indicated that interventions studied were not described clearly in research papers.

Dysart and Tomlin (2002) sent a survey on the EBP to 400 randomly selected members of the American Occupational Therapy Association which was returned by 209 therapists. The main barriers to the EBP were a lack of time to access research information, difficulty in using electronic databases, high enrolment costs for attending continuing education and a lack of conveniently available electronic databases. Furthermore, one-third of the respondents or more perceived research results to be unclear and difficult to understand believed that research results did not translate to individual clients and perceived it as difficult to base clinical decisions on research because of conflicting conclusions (Dysart & Tomlin, 2002). Finally, a survey sent to a purposive sample of 85 Australian OTs was completed by 67 therapists (McCluskey, 2003). The most common barriers experienced by these Australian therapists were a lack of time, a high workload and a lack of skills in searching and appraising the evidence. This short overview of barriers to the EBP in different countries shows that there are many similarities. Especially a lack of time, a high workload and a lack of skills in either appraising the evidence or applying it to practise seem to be major barriers in the different countries.

Similar studies of allied healthcare professions such as physical therapists (Jette et al., 2003; Salbach et al., 2007), nurses (Egerod & Hansen, 2005; Oranta et al., 2002) or healthcare professionals in general (Parahoo, 2000; Thompson, et al., 2001; Upton & Upton, 2006) found similar barriers to the EBP. Some of these similarities are the experienced lack of time (Parahoo, 2000; Jette et al., 2003; Salbach et al., 2007) and experiencing an inability to transfer research findings to treatment of patients (Jette et al., 2003; Salbach et al., 2007).

Although similarities exist among countries, differences can also be found. These may be caused by differences in healthcare systems and differences in the mission or involvement of professional organizations. Another factor might be that previous studies related to the EBP among OTs have all been conducted in English-speaking countries. However, previous studies among nurses in countries where English is not the official language reported that publication of research in a foreign language was an important barrier to implementing EBP (Kajermo et al., 1998; Oranta et al., 2002) and that evidence-based journals written in English were used least frequently (Egerod & Hansen, 2005). This language barrier may also be a problem for occupational therapists from countries where English is not the primary language.

Both the Dutch Association of Occupational Therapy (Ergotherapie Nederland; EN) (Van Bodegom et al.,

2007) and the Dutch government (Health Council of the Netherlands, 2000) recognize the significance of the EBP for the profession. The available literature, however, suggests that the EBP is not implemented optimally among OTs (Curtin & Jaramazovic, 2001; Dysart & Tomlin, 2002; Humphris et al., 2000; Lysaght et al., 2001; McCluskey, 2003; Pollock et al., 2000; Sweetland & Craik, 2001;) and other allied health professions (Egerod & Hansen, 2005; Oranta et al., 2002; Parahoo, 2000; Upton & Upton, 2006). Information on barriers to the EBP specific to the Dutch OTs is necessary to increase integration of the EBP principles into clinical practise. Therefore, the present study addressed how the Dutch OTs perceive the EBP, which sources of evidence the Dutch OTs use in making clinical decisions, and which barriers the Dutch OTs experience when implementing the EBP.

Methods

Participants

The Dutch OTs employed by the Dutch organization and members of the Dutch Association of Occupational Therapy (EN) at the time of the study were eligible to participate in the study. Out of 2,019 eligible OTs (December 2007), 200 Dutch OTs were sent a survey. Ten percent of the eligible OTs did not have an email address associated with the membership information. To prevent biassed results because of a lack of internet access (Nardi, 2006), those with no email address purposely were included and received a paper version of the questionnaire by mail. Stratified random sampling was used to select 200 participants, of which 90% ($n=180$) had an email address and 10% ($n=20$) had no email address. As a minimum of 100 responses was desired, 200 OTs were selected as a 50% response rate was assumed. A sample size of 200 OTs is justifiable because the total population is relatively small and homogeneous.

Instrumentation

A Dutch-language questionnaire consisting of both positive and negatively stated items was developed to evaluate the research questions. Topics and questions addressed in previous studies addressing the EBP among health care professionals (Humphris et al., 2000; Parahoo, 2000; Dysart & Tomlin, 2002) were used as a basis to develop a questionnaire suitable for evaluating the EBP among the Dutch OTs. First, the participants were asked to rate how often they used 19 different sources using a rating-scale of "daily", "weekly", "monthly", "biannually", "annually", "never" and "I have no access to this source". Second, the therapists were requested to rate 21 statements on barriers to implementing the EBP and 11 statements evaluating their attitude toward the EBP. The participants were provided with a 5-point Likert scale ("agree", "somewhat agree", "neither agree nor disagree", "somewhat disagree", "disagree") to rate these statements. Last, therapists answered 15 demographic questions.

The format and content of the questionnaire was evaluated during two pilot tests, with assistance from six practising OTs. A paper version of the questionnaire, mailed to 10% ($n=20$) of the selected participants, was adjusted to match the format and content of the online version of the survey. The online survey was created using VOVICI'S web survey software (Vovici Corp., 2008).

Procedures

Data were collected from May through July of 2008. An invitation to participate was distributed to 180 therapists through email and to 20 therapists through traditional mail. An informed consent document was not required, as respondents who completed and submitted a questionnaire provide their approval through their participation (per Kansas University Medical Center's Human Subjects Committee). Data was collected and analyzed in an anonymous manner. Non-respondents participating through email received a reminder messages after 2 and/or 4 weeks. After 6 weeks, a target response rate of 50% or higher was not obtained yet. Therefore, all non-respondents received an additional request to participate in the study.

Data analysis

The reliability of the concepts within the questionnaire was assessed after data collection. Internal consistency was evaluated using the Cronbach's alpha procedure (not acceptable=α 0.6 or lower, acceptable=α 0.6 – 0.7, good=α 0.7 – 0.8, very good=α 0.8 – 0.9, excellent=α 0.9 or higher). Descriptive statistics were calculated for all variables. Differences between several demographic groups were evaluated using analyses of variance (F) (ANOVA), the Kruskal–Wallis (H) or Mann–Whitney

U test (*U*). In order to evaluate more specific which groups were significantly different from each other, the Fisher's least significant difference served as a post-hoc test when the ANOVA assumptions were not violated (Ott & Longnecker, 2001). The Games–Howell post-hoc procedure was used to evaluate this when the assumption of equal variances was violated (Games & Howell, 1976). Relations between variables related to frequency of resource use, perceived barriers and attitude to the EBP were evaluated using the Pearson's product moment correlation coefficient (*r*). An alpha level of 0.05 was used for all tests. All data were analyzed using the Statistical Package for the Social Sciences (SPSS inc., Chicago Ill).

Results

Respondents

Out of the 200 selected OTs, 183 turned out to meet the eligibility criteria. A final response rate of 54.6% was reached with 100 valid responses out of these 183 eligible OTs. The demographic information of this group of respondents is stated in Table I.

The study participants represented the total population of interest (working OTs who are members of the EN) with regard to age (χ^2 [6, 100] = 11.720, $p > 0.05$) and gender (χ^2 [1, 99] = 0.100, $p > 0.05$). However, the participants worked on average significantly more hours per week compared with the total population of interest (χ^2 [6, 100] = 18.476, $p < 0.01$).

Table I. Demographic information on the group of respondents

	n (%)
Age	
M = 35 – 39 years old	
<25	5 (5%)
25–29	27 (27%)
30–34	21 (21%)
35–39	13 (13%)
40–44	6 (6%)
45–49	7 (7%)
50–54	9 (9%)
55–59	10 (10%)
>60	2 (2%)
Gender	
Female	92 (92.9%)
Male	7 (7.1%)
Occupational Therapy degree	
Bachelor	97 (97%)
Master	3 (3%)
Work setting	
Nursing home	30 (30%)
Rehabilitation centre	33 (33%)
Academic hospital	4 (4%)
Non-academic hospital	9 (9%)
Psychiatric organization	2 (2%)
Organization for people with a mental disability	4 (4%)
Private practise	11 (11%)
Special education	2 (2%)
Other	5 (5%)
Years practise as Occupational Therapist	
M = 13.17 years	
SD = 9.97	
Hours worked per week	
M = 30 – 34 hours per week	
5–9	1 (1%)
10–14	1 (1%)
15–19	6 (6%)
20–24	33 (33%)
25–29	10 (10%)
30–34	27 (27%)
35–36	14 (14%)
>36	8 (8%)

Reliability and validity of the questionnaire

The Cronbach's alpha procedure was used to evaluate the internal consistency of the three different constructs of the questionnaire. Tables II and III show the six variables excluded from data analysis because of their limited contribution to measuring the overall concepts (item-to-total correlation lower than 0.10) (Personal communications B.J. Gajewski, September 11 2008).

A good internal consistency was found for all measured constructs (use of sources: $\alpha = 0.789$; barriers: $\alpha = 0.795$; attitude toward EBP: $\alpha = 0.783$). Face validity for the questionnaire was supported by expert opinion, sought from both academic experts and practising OTs.

Attitude toward evidence-based practise

Table IV shows that the participating Dutch OTs viewed the EBP as a positive concept overall. Even so more than half (53%) of the participants perceived that it requires too much effort to use evidence in clinical practise (see Table IV). This may prevent OTs from utilizing the EBP principles in practise.

The overall perception on the EBP of OTs working in academic hospitals (F [8, 91] = 3.004, $p < 0.01$) was significantly more positive compared with OTs working

Table II. Positively phrased statements excluded from data analysis

Statement (*n*)	M±SD	A	SA	N	SD	D
		n (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)
My employer provides enough time to attend continuing education courses (workshops etc.). (99) *	3.68±1.227	26 (26.3)	44 (44.4)	8 (8.1)	13 (13.1)	8 (8.1)
Research outcomes are relevant to my practise. (99) *	3.77±1.058	28 (28.3)	35 (35.4)	24 (24.2)	9 (9.1)	3 (3)

A=agree, SA=somewhat agree, N=neither agree nor disagree, SD=somewhat disagree, D=disagree, n=number of respondents.

Scoring system: 5=agree / 4=somewhat agree / 3=neither agree nor disagree / 2=somewhat disagree / 1=disagree.

*n=<100 because of missing data and/or "not-applicable" answers.

at any other workplace except for those working in psychiatric organizations. OTs with more OT colleagues in their workplace were likely to disagree more that the EBP is a temporary trend (r=0.306, $d.f.$=89, $p<0.005$) suggesting an increase in the number of colleagues correlated with a more positive attitude toward the EBP.

Use of sources

Human sources

Human sources were used most frequently (Table V), although this is a relatively less robust source of evidence, with 79% of the respondents using their OT colleagues weekly or more often and 82.8% using information from non-occupational therapy colleagues weekly or more often. OTs with less experience were more likely to use their OT colleagues more frequently as a source for clinical decision-making (r=0.336, $d,f.$=99, $p<0.005$).

Robust sources of evidence

The participants used sources of more robust quality, such as journal articles and abstracts from electronic databases, least frequently to guide clinical practise (Table V). OTs working at academic hospitals used articles in English significantly more than OTs working at nursing homes, rehabilitation centres, non-academic hospitals and organizations for people with mental disabilities (H [8]=24.320, $p<0.005$).

Other sources of evidence

Beside OT and non-OT colleagues, most OTs used information gained from guidelines, workshops, conferences and in-service education to make clinical decisions (Table V).

Barriers to evidence-based practise

Skills of the occupational therapist

Difficulty in evaluating the quality of evidence was the single greatest barrier experienced by the Dutch OTs (see Table VI). Those experiencing this difficulty (67,4%) were less likely to understand statistical analyses and were less likely to think that research is written in a way easy to understand (see Table VII). More than half of the participants (56.2%) did not think research is written in an understandable manner.

Table III. Negatively phrased statements excluded from data analysis

Statement (*n*)	M±SD	A	SA	N	SD	D
		n (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)
Enrollment costs prevent me from attending important continuing education courses (workshops etc.) (99) *	3.15±1.424	9 (9.1)	36 (36.4)	15 (15.2)	9 (9.1)	30 (30.3)
There is little research that applies to my practise. (99) *	2.91±1.238	15 (15.2)	21 (21.2)	35 (35.4)	14 (14.1)	14 (14.1)

A=agree, SA=somewhat agree, N=neither agree nor disagree, SD=somewhat disagree, D=disagree, n=number of respondents.

Scoring system: 1=agree / 2=somewhat agree / 3=neither agree nor disagree / 4=somewhat disagree / 5=disagree.

*n=<100 because of missing data and/or "not-applicable" answers.

Table IV. Attitudes of Dutch occupational therapists toward evidence-based practise

Attitude statement (*n*)	M±SD	A	SA	N	SD	D
		n (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)
It takes too much effort to use evidence in clinical practise. (100)	2.55±1.058	15 (15)	38 (38)	29 (29)	13 (13)	5 (5)
It is too difficult to use research evidence in clinical practise. (100)	2.75±1.114	11 (11)	38 (38)	22 (22)	23 (23)	6 (6)
Research evidence helps me to make clinical decisions. (99)†	3.95±0.973	31 (31.3)	43 (43.4)	16 (16.2)	7 (7.1)	2 (2)
I would like to work according to the evidence-based practise principles. (100)	3.96±0.840	29 (29)	41 (41)	28 (28)	1 (1)	1 (1)
Evidence-based practise is a temporary trend. (99)†	3.99±1.102	1 (1)	11 (11.1)	21 (21.2)	21 (21.2)	45 (45.5)
More occupational therapists should use evidence to guide their practise. (100)	4.01±0.810	32 (32)	38 (38)	29 (29)	1 (1)	0 (0)
Evidence-based practise has a negative effect on the profession. (99)*†	4.22±0.932	1 (1)	4 (4)	16 (16.2)	29 (29.3)	49 (49.5)
Research and clinical experience are equally important. (100)	4.29±0.977	54 (54)	31 (31)	7 (7)	6 (6)	2 (2)
Research helps to build a scientific knowledge base for clinical practise. (100)	4.50±0.718	60 (60)	32 (32)	7 (7)	0 (0)	1 (1)
Research is essential to the occupational therapy profession. (100)	4.77±0.446	78 (78)	21 (21)	1 (1)	0 (0)	0 (0)

A=agree, SA=somewhat agree, N=neitheragree nor disagree, SD=somewhat disagree, D=disagree.

Scoring system: 5=agree / 4=somewhat agree / 3=neither agree nor disagree / 2=somewhat disagree / 1=disagree.

n=number of respondents, **n*<100 because of missing data.

†Statement was phrased negatively: reversed scoring system applies.

Younger OTs (<25 years old) felt the quality of evidence was more easily determined than did therapists from all other, older age groups (F [8, 86]= 2.463, $p<0.05$).

A substantial proportion of the Dutch respondents (42.9%) reported difficulties in using evidence written in a foreign language (see Table VI). Therapists experiencing this barrier were significantly less likely to use

Table V. Frequency of sources used by participating occupational therapists in making clinical decisions

Sources (*n*)	M±SD	Daily	Weekly	Monthly	Biannually	Annually	Never	No access †
		n (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)
Experience (100)	6.94±0.239	94 (94)	6 (6)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Client (100)	6.67±0.711	77 (77)	16 (16)	5 (5)	1 (1)	1 (1)	0 (0)	1 (1)
Non-occupational therapy colleagues (99)*	6.02±0.808	23 (23.2)	59 (59.6)	16 (16.2)	0 (0)	0 (0)	0 (0)	1 (1)
Occupational therapy colleagues (100)	5.97±0.771	23 (23)	56 (56)	16 (16)	5 (5)	0 (0)	0 (0)	0 (0)
Family and friends of the client (100)	5.85±0.809	19 (19)	53 (53)	23 (23)	4 (4)	1 (1)	0 (0)	0 (0)
Internet websites (100)	4.98±1.155	4 (4)	31 (31)	40 (40)	15 (15)	4 (4)	6 (6)	0 (0)
Textbooks (100)	4.47±0.969	1 (1)	9 (9)	42 (42)	37 (37)	7 (7)	3 (3)	1 (1)
Occupational therapy guidelines (100)	4.39±1.270	4 (4)	16 (16)	25 (25)	34 (34)	13 (13)	7 (7)	1 (1)
Articles from the EN journal (100)	4.12±0.868	0 (0)	2 (2)	34 (34)	42 (42)	18 (18)	4 (4)	0 (0)
Other guidelines (100)	3.99±1.314	3 (3)	9 (9)	22 (22)	32 (32)	20 (20)	12 (12)	2 (2)
Workshops (98)*	3.49±0.976	1 (1)	4 (4.1)	5 (5.1)	30 (30.6)	53 (54.1)	2 (2)	3 (3.1)
Conferences (100)	3.43±0.832	0 (0)	3 (3)	5 (5)	31 (31)	55 (55)	5 (5)	1 (1)
In-service education (100)	3.23±1.196	1 (1)	2 (2)	11 (11)	20 (20)	47 (47)	9 (9)	10 (10)
Post-graduate education (100)	3.23±1.309	4 (4)	6 (6)	3 (3)	8 (8)	60 (60)	13 (13)	6 (6)
Articles from other professional journals in Dutch (100)	2.96±1.082	0 (0)	0 (0)	7 (7)	27 (27)	29 (29)	29 (29)	8 (8)
Abstracts from electronic databases (96)*	2.90±1.373	0 (0)	6 (6.3)	8 (8.3)	15 (15.6)	18 (18.8)	39 (40.6)	10 (10.4)
Articles from professional journals in English (100)	2.86±1.255	0 (0)	3 (3)	8 (8)	22 (22)	14 (14)	45 (45)	8 (8)

EN, Ergotherapie Nederland.

Scoring system: Daily=7 / Weekly=6 / Monthly=5 / Biannually=4 / Annually=3 / Never=2 / No access=1.

n=number of respondents / **n*=<100 because of missing data.

†This answer option was treated as missing in all bivariate analyses.

Table VI. Barriers experienced by Dutch occupational therapists

	M±SD	A	SA	N	SD	D
		n (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)
I find it difficult to determine if evidence is of good quality. (95)* †	2.26±1.074	24 (25.3)	40 (42.1)	16 (16.8)	12 (12.6)	3 (3.2)
My employer provides a sufficient amount of time to read professional literature.(98)*	2.28±1.138	3 (3.1)	13 (13.3)	23 (23.5)	28 (28.6)	31 (31.6)
My employer provides enough time during work hours to access research evidence. (98)*	2.32±1.181	4 (4.1)	14 (14.3)	22 (22.4)	27 (27.6)	31 (31.6)
Research is written in a way that is easy to understand. (98)*	2.37±0.913	0 (0.0)	11 (11.2)	32 (32.7)	37 (37.8)	18 (18.4)
It is hard to translate conclusions of research studies to the treatment of individual clients. (99)*†	2.56±1.081	13 (13.1)	44 (44.4)	22 (22.2)	14 (14.1)	6 (6.1)
I have difficulties in searching the Internet for evidence. (94)*†	2.56±1.205	15 (16)	41 (43.6)	19 (20.2)	8 (8.5)	11 (11.7)
I find statistical analyses in research articles hard to understand. (100) †	2.58±1.232	20 (20.0)	35 (35.0)	22 (22)	13 (13)	10 (10)
I can use electronic databases to search for research information without any difficulties. (88)*	2.70±1.306	10 (11.4)	15 (17)	22 (25)	21 (23.9)	20 (22.7)
Formulating a clinical question to a clinical problem is difficult for me. (95)*†	2.83±1.342	15 (15.8)	34 (35.8)	13 (13.7)	18 (18.9)	15 (15.8)
I understand the statistical analyses in research articles. (98)*	2.89±1.217	7 (7.1)	30 (30.6)	22 (22.4)	23 (23.5)	16 (16.3)
I find it difficult to use evidence written in a foreign language. (98)*†	2.98±1.436	19 (19.4)	23 (23.5)	18 (18.4)	17 (17.3)	21 (21.4)
I am able to critically appraise research evidence. (100)	3.27±1.153	15 (15)	32 (32)	24 (24)	23 (23)	6 (6)
Management at my workplace supports the implementation of new treatment plans based on research information. (98)*	3.50±1.212	23 (23.5)	33 (33.7)	18 (18.4)	18 (18.4)	6 (6.1)
I feel capable to make changes in therapeutic procedures at my work place using research evidence. (98)*	3.56±1.185	24 (24.5)	33 (33.7)	21 (21.4)	14 (14.3)	21 (6.1)
My colleagues from other professions support the use of research evidence in practise. (98)*	3.74±1.019	25 (25.5)	36 (36.7)	27 (27.6)	7 (7.1)	3 (3.1)
My occupational therapy colleagues support the use of research evidence in practise. (99)*	3.91±1.051	37 (37.4)	27 (27.3)	26 (26.3)	7 (7)	2 (2)
I can use the Internet as a tool to search for research information without any difficulties. (99)*	4.07±1.118	46 (46.5)	29 (29.3)	13 (13.1)	7 (7.1)	4 (4)

A=agree, SA=somewhat agree, N=neither agree nor disagree, SD=somewhat disagree, D=disagree.

Scoring system: 5=agree / 4=somewhat agree / 3=neither agree nor disagree / 2=somewhat disagree / 1=disagree.

†Statement was phrased negatively: reversed scoring system applies.

n=number of respondents, **n*<100 because of missing data.

Table VII. Pearson correlation coefficient between barriers to evidence-based practise

	1.	2.	3.	4.
1. I find it difficult to determine if evidence is of good quality	-			
d.f.		*r* 0.456** 95	*r* 0.305** 94	*r* 0.483** 95
2. I understand the statistical analyses in research articles		-	*r* 0.671**	*r* 0.520**
d.f.			94	98
3. Research is written in a way that is easy to understand			-	*r* 0.354**
d.f.				96
4. I am able to critically appraise research evidence				-
d.f.				

**$p<0.01$ (results are significant at an alpha level lower than 0.01)

d.f.=degrees of freedom (number of participants minus 2)

articles from journals written in English ($r=0.569$, *d.f.*=88, $p<0.0000001$) and abstracts from electronic databases ($r=0.511$, *d.f.*=82, $p<0.000001$) relative to OTs who did not report difficulties with evidence written in a foreign language.

Work setting

Support from management ($r=0.449$, *d.f.*=96, $p<0.00001$), support of OT colleagues($r=0.363$, *d.f.*=96, $p<0.001$) and support of colleagues from other disciplines ($r=.359$, *d.f.*=95, $p<.001$) were all associated with an increased perceived capability to make changes in treatments using research evidence. OTs working at academic hospitals felt the most capable of incorporating changes in therapeutic procedures based on

research evidence (F [8, 89] = 2.258, $p < 0.05$). Dutch therapist feeling more capable of changing therapeutic procedures based on research evidence were more probable to have more occupational therapy colleagues within their workplace ($r = 0.372$, *d.f.* = 88, $p < 0.001$). Last, unique to this study was that perceived support of management was likely to increase the use of several (robust) sources of evidence (see Table VIII).

Discussion

The results of the study provide more information about the use of evidence in clinical practise and the barriers experienced by the Dutch OTs. Although the participants of the study were not completely representatives for the total population of interest, and this cross-sectional survey only shows data concerning one point in time does show that there still are a lot of barriers concerning the EBP and that improvement is still necessary. These findings are consistent with that of studies of the EBP among OTs in other countries. Although some barriers might be related specifically to the Dutch situation, there is much overlap in the barriers described in studies related to the EBP in different international settings.

Attitude toward evidenced-based practise

The positive attitude regarding the EBP held by the Dutch OTs survey was similar to the attitudes reported in the previous studies among OTs from the UK (Humphris et al., 2000; Curtin & Jaramazovic, 2001) and the United States (Philibert et al., 2003). This positive attitude is essential before OTs will actually implement the EBP method in practise (Rogers, 2003). Even if a positive attitude prevails, however, there is no guarantee that the EBP will be implemented because of constraints imposed by the presence of barriers.

Table VIII. Pearson correlation coefficients between management support and the use of sources in practise

	Management support experienced by OTs
1. Use of information obtained from in-service education to make clinical decisions	*r* 0.360**
d.f.	86
2. Use of information from abstracts from electronic databases to make clinical decisions	*r* 0.409**
d.f.	83
3. Use of information from scientific articles in English to make clinical decisions	*r* 0.402**
d.f.	88

**$p < 0.01$ (results are significant at an alpha level lower than 0.01)
d.f. = degrees of freedom (number of participants minus 2)

Use of resources

Studies on the use of resources by OTs in clinical practise (including the present study) report that colleagues were used as sources of evidence at a high frequency (Lysaght et al., 2001; Sweetland & Craik, 2001; Bennett et al., 2003). Colleagues are relatively easy to access. However, the EBP requires information from colleagues to be evaluated critically before being used in practise and that colleague-derived information is then complemented with information from more robust sources of evidence, such as research results published in peer-reviewed articles. The present study and a study among the Australian OTs (Bennett et al., 2003) both found that therapists with the least experience were more likely to seek information from OT colleagues in order to make clinical decisions. Because OT programmes worldwide are integrating more EBP theory in their curricula, new graduates are expected to use the EBP methods and robust sources of evidence more routinely. However, a new graduate may be discouraged from pursuing the EBP principles if these principles are absent or are only partly utilized by senior colleagues. A new therapist might feel that they do not have the skills or authority to change the way of practise, or may not possess the self-confidence to do so. This illustrates the importance of the work environment in supporting use of the EBP. The least frequent source of information used by Dutch OTs to support clinical decisions in this study were the more robust sources of evidence. Descriptive comparison suggested that the American OTs (Dysart & Tomlin, 2002; Philibert et al., 2003) used robust sources more frequently compared with the Dutch participants in the current study. A higher percentages of therapists (29% and 36.3% compared with 3 % in this study) in the American studies who possessed a master's degree (Dysart & Tomlin, 2002; Philibert et al., 2003) may be a factor explaining this difference, as having a post-graduate degree is associated with increased use of current research literature (Bennett et al., 2003). This suggests that advanced education may be an important factor in increasing the use of research literature in practise.

Barriers to implementing evidenced-based practise

In the current study, the participants identified "determining the quality of evidence" to be the single greatest barrier preventing implementation of the EBP. One American study found that 33% of the participants felt confident to appraise the quality of the evidence critically (Dysart & Tomlin, 2002) compared with 15.8% of the Dutch participants who perceived no difficulty in determining the quality of evidence. Again, an advanced degree or additional training may increase the skills of the Dutch OTs to determine quality of evidence seeing that Bennett et al (2003) found having higher academic qualifications or previous EBP training was associated with an increased confidence in the EBP skills. Determining the quality of research is an essential skill for deciding which evidence is appropriate for treatment of individual clients.

A lack of skill and limited knowledge regarding statistical and research methodologies may be factors underlying the finding that more than half of the respondents believed that research is not written in an understandable manner. Irrespective of a clinician's aptitude related to these research skills, researchers must be critical regarding the way research reports are written and must facilitate translation of research findings to clinical practise. Describing findings in a practical context will encourage implementation of research in everyday OT practise.

The Dutch OTs who reported language as a barrier (42.9%) also were less likely to use articles written in languages other than Dutch. English is the most common publication language, so the Dutch OTs (and possibly OTs from other non-English speaking countries) must develop strategies to collect information from research reported in English in order to obtain the widest perspective on evidence available to guide clinical decisions. To make evidence in English more accessible for non-English speaking OTs and make evidence in other languages more accessible for English speaking OTs, Ilott et al. (2006) suggest that evidence should be translated into the six official languages of the WHO and add comments to this for the interpretation of the evidence for specific cultures and countries (Ilott et al., 2006). Language as a barrier to implementation of the EBP has been noted as a factor among non-English speaking nurses (Egerod & Hansen, 2005; Kajermo et al., 1998; Oranta et al., 2002) but was not identified previously as a barrier among OTs. Although short summaries (Critically Appraised Papers and Critically Appraised Topics) published in Dutch are available which do include results of foreign-language articles, this level of detail is not sufficient as a sole basis for making clinical decisions. One solution is for the National Occupational Therapy Associations (of non-English speaking countries) to subsidize translations and then make these translations accessible to association members.

No major barriers were found regarding the access to resources. A discrepancy, however, was found between having access to the internet (100%) and reported access to abstracts from electronic databases (90%). This may indicate a lack of knowledge about where evidence may be found and how it can be retrieved rather than a lack of access, because several electronic databases (e.g., OTseeker, Pubmed, and TRIPdatabase) provide free access to abstracts from full-text articles. Although abstracts alone are not sufficient to provide a basis for clinical decisions, this strategy provides a good overview of available evidence. It is important that OTs also have easy access to full text articles related to their area of endeavour. Dysart and Tomlin (2002) made a similar observation in their study among the American OTs.

Conclusion

Evidence-based practise is essential in order to keep improving OT practise in the Netherlands, by combining the latest evidence with the therapist's experience and the client's values. Many barriers continue to exist impeding the effective use of this method of practise. Implementation of the EBP principles seems to be a global problem as many barriers are similar for OTs in different countries. Therefore, cooperation between countries might be most effective in decreasing or eliminating these barriers.

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Supporting Information

Additional supporting information may be found in the online version of this article:

Appendix. EBP survey.

Please note: Wiley-Blackwell are not responsible for the content or functionality of any supporting materials supplied by the authors. Any queries (other than missing material) should be directed to the corresponding author for the article.

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