Knowledge And Attitudes Of Healthcare Professionals Towards Electroconvulsive Therapy In Africa: A Systematic Review

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ABSTRACT

Electroconvulsive therapy (ECT) is a physical treatment method where a small electric current is intentionally passed through the brain of mentally ill-patients to elicit a seizure for treatment or diagnosis. ECT has been a global practice for management of mental illnesses. Despite the introduction of modified form of ECT, the practice is still associated with some challenges including fear, anxiety and memory loss among others, consequently creating controversies towards its acceptance. These controversial issues were not only found among mentally ill-patients but also among their relations, health care professionals (HCP). In developing countries including Nigeria, people usually opted for unmodified ECT (no anaesthesia) as it’s less expensive (ref). Several studies had evaluated knowledge, attitude and even the practice of ECT among HCP, patients and their relations. However, no related systematic review has been found in the searched databases. This study is aimed at evaluating quantitative researches that explored knowledge and attitude of HCP towards ECT in Africa. Quantitative systematic review method was employed and the following databases have been searched in September and October 2016: Cochrane, Campbell, and Joanna Briggs Institutes (JBI) (2016) and other Cardiff University electronic resources including Medline, CINAHL, PubMed, British Nursing Index, Web of Sciences, Psych INFO, Scopus and Trip. Following advanced search, the results from databases identified 869 articles among which 48 are relevant, 10 were assessed, 4 excluded out of criteria definition, remaining 6 plus one manually selected article totaling 7 shortlisted were reviewed following independent reviewers’ consensus and findings are reported. Following the data analysis, it is concluded the knowledge and attitudes of HCPs in Africa about ECT are adequately and positive respectively.

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INTRODUCTION:
ECT is defined as the intentional passage of small electric current through the brain of patient with mental illness, usually under general anaesthesia, to trigger fit/seizure (Mayo Clinic 2016). Evidence regarding health care professional’s knowledge and attitude toward electroconvulsive therapy (ECT) in Africa in view of controversies associated with ECT such as fear, anxiety, faecal or urine incontinences, fractures of the small bones (Royal College of Psychiatrist, 2016; Hersh (2012) and even among lay public due to the nature of the early treatment patients were given high electricity doses without anaesthesia (Mayo Clinic 2016). This is in spite the fact ECT as being considered safe and effective in parts of the world like United Kingdom, USA, New Zealand and Australia where the modified type of ECT is being practiced due the advancement in the used of general anaesthesia (Lamont, 2011). The concerns are rife in African countries where unmodified form of ECT is still practiced because it costs less money compared to modified form of ECT (Selis et al., 2008).
No systematic review regarding the knowledge and attitudes of health care professionals (HCPs) toward ECT in African countries has been undertaken. This review was designed to contribute, enhance and promote the evidence based clinical practices regarding health care professional knowledge and attitudes of ECT in African countries. It aimed to identify, analyse and synthesise information related to the subject matter to ensure the best available evidence and clinical implementation (Polit and Beck 2010; Parahoo, 2014; Rees, 2011).

METHOD
Quantitative systematic review method was employed and the following databases have been searched in September and October 2016: Cochrane, Campbell, and Joanna Briggs Institutes (JBI) (2016) and other Cardiff University electronic resources including Medline, CINAHL, PubMed, British Nursing Index, Web of Sciences, Psych INFO, Scopus and Trip.

Study design and Data Extraction
Following advanced search, the results from databases identified 869 articles among which 48 are relevant, 10 were assessed, 4 excluded out of criteria definition, remaining 6 plus one manually selected article totaling 7 shortlisted were reviewed following independent reviewers’ consensus and findings are reported. Seven (7) studies were identified for inclusion thereby maintaining rigours which then progressed in to data extraction and then data synthesis in this review which generally describe primary studies results. In conducting systematic review, we used standardised/validated data extraction form, involvement of more than one person in the process of data extraction and recording exactly the data as reported from the primary sources (Dykier (2016). Having extracted the relevant information from the process of data extraction, it was report in a clearer and understandable way to follow the thought through the process of data synthesis (Boland 2014). Among the included studies are 1 randomised controlled trial by Farrant et al. (1979), 6 observational/descriptive studies, out of these 4 were cross-sectional studies (James et al. 2009, Abbas et al. 2007, James et al. 2010 and James 2013), 1 observational cohort prospective study (Oyewumi 1994) and 1 retrospective observational study (James et al. 2009); and 1 prospective study (by Abbas et al., 2007) (see Table 1).

The Table also shows the study setting, indicating that the studies were undertaken in African countries, although 1 transcultural study by Abbas et al. (2007) was conducted in three countries United Kingdom, Iraq and Egypt. This study was included but only the results from Egypt considered. The remaining 6 studies were carried out within Africa.
Table 1: The six-primary observational and descriptive studies and their settings

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<th>Setting</th>
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<td>1</td>
<td>Abbas, M., Mashrai, N. and Mohanna, 2007 knowledge of and attitudes towards electroconvulsive therapy of medical students in United Kingdom, Egypt and Iraq: A transcultural perspective. Journal of ECT. 00 (00) P. 1 – 5.</td>
<td>UK, Iran, Egypt</td>
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<td>3</td>
<td>James, B. O., Omoaregba, O. J., and Olotu, S. O. 2009 Nigerian medical student’s attitudes to unmodified electroconvulsive therapy.</td>
<td>Nigeria</td>
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<td>6</td>
<td>James, B. O. and Inogbo, C. F. 2013 Implementing modified electroconvulsive therapy in Nigeria. Currents status and psychiatrist’s.</td>
<td>Nigeria</td>
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<tr>
<td>7</td>
<td>Farrant, J. L., and Farhoumand, N. 1979 Attitudes of Ugandan medical students towards straightand modified electroconvulsive therapy. Medical education, Department of psychiatry, Makarere University, Kampala Uganda. P 17 – 22.</td>
<td>Uganda</td>
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The nature of these studies showed heterogeneity. Therefore, knowing the level of heterogeneity from the included studies plays a paramount role as it determines the use of narrative synthesises which depends upon the reviewer’s decision or judgement (Connor et al 2016).

Data analysis was undertaken, despite the subjectivity in the process of narrative synthesis compared to meta-analysis, to make information gathered transparent, rigorous, unbiased and minimised (Champatana 2004). By using the validated as well as appropriate tool, errors and bias were minimised thereby providing result reliably and consistently (JBI 2016; CRD 2009 and Jahanet al.2016). Dykier (2016) identified narrative and meta-analysis as the two ways by which data can be synthesised and analysed irrespective of any study type or design. Meta-analysis can be applied/used if the study characteristics such as population, study design, intervention statistical test and outcomes tend to be the same (homogeneous), or when dealing with large number of studies that require computer trouble coding and statistical calculation (Higgins et al. 2011). On the other hand, narrative synthesis can be used if the included primary studies characteristics differ, also known as (Heterogeneous) or when small number of studies are included (Dykier 2016). Due to the variation of the included studies a narrative approach will be used.

For this review, considering the nature of the review questions which include knowledge of HCPs towards ECT in African countries and attitudes of HCPs regarding ECT also in African countries. In view of this, all the included studies that examined HCPs knowledge will be considered as knowledge theme, whilst those for HCPs attitudes (attitudes theme) and those related to outcomes will be treated separately.
RESULTS

Knowledge of HCPs theme
The following four studies out of 6 examined the health care professional knowledge regarding ECT. Despite the variation in studies design, population characteristics, setting as presented in the above, these four studies (James et al., 2010; Oyewumi and Kazaria, 1994; James et al., 2009b). Three of these studies identified increase in the theoretical knowledge toward ECT for 91.2%, 74.2%, and P < 0.022, which were statistically significant with exception of Abbas et al. (2007) who noted inadequate knowledge regarding ECT 17% (P < 0.0 470), respectively.

Attitudes of HCPs theme
From the respondent’s attitudes regarding ECT, all the 6 observational studies together with one RCT reported attitudes of the respondents. Oyewumi and Kazaria (1994), James et al. (2009a), James et al. (2010) and James et al. (2013) reported positive attitudes towards ECT as being favourable (80.5%), beneficial (P < 0.017) 70.7%, effective (P < 0.001) 61.1%, and 69.7% respectively, all of which were statistically significant. However, negative attitudes were also reported to those who consider unmodified ECT as outmoded, hazardous and more dangerous as identified by (Farrant et al. 1979 and James et al. 2009b) with 86% and (P < 0.001) 64.5%. Whereas, 46 (54%) respondents from Abbas et al. (2007) reported don’t know regarding attitudes toward ECT.

Other Outcomes Themes
Despite the heterogeneity in the population, setting and design from all the seven included studies, most studies reported outcomes that were similar from their studies. In view of this, those outcomes will also be considered into separate theme in order to identify their statistical significance. These common outcomes reported by most studies include; myths and misconceptions related to ECT such as causes brain damage, ECT is painful, ECT should only be used as last resort, ECT causes adverse effect, ECT is dangerous and ECT is inhuman. From the respondent’s perspective on whether ECT is being misused/or used, out of 7 studies, 4 studies (James et al. 2009a and James et al. 2010) reported ECT as being misused with highly significant values of p< 0.001 and p< 0.0001. However, James et al. (2009b) disagreed with this statement with p< 0.00357. Whilst Abbas reported no idea on whether ECT is been misused or not with 54%. While the remaining three studies reported no information regarding this statement.
Regarding ECT adverse effects and should only be used as last resort (Oyewumi and Kazaria (1994) and James et al. (2009b) identified ECT causes slight/permanent brain damages to some patients according to 61.3% respondents and p < 0.002 which was statistically significant. Although, James et al. (2009a) and James et al. (2013) disagreed that ECT causes brain damage 81.1%, and 63.2% which were statistically significant. On the other hand, ECT should only be used as last resort, two studies reported that ECT should only be used as last resort when other treatments failed or when patients are not responding to other medications although their report varies as James et al. (2009a) agreed with 78.7% while Oyewumi and Kazaria (1994) disagreed with 80.6%. Whereas, Abbas et al. (2007) is the only study who reported ECT causes death with value of 52%.
From the ECT myths and misconception out of 7 included studies, 2 reported same statement- ECT is being painful and dangerous to the patients therefore should be discontinued. James et al. (2009b) agreed with this statement that ECT causes pain (P < 0.001) while James et al. (2009a) disagree with 85 (51.2%). However, from those respondents who perceive ECT as dangerous, respondents from James et al 2013 consider unmodified ECT as safe (51.3%) Whereas, Farrant et al. (1979) James et al. (2009a) reported unmodified ECT as dangerous p <0.001, 64.5% which were statistically significant. This goes in contrary with Oyewumi and Kazaria (1994) who disagreed that ECT should be discontinue (80%). In this statement, Abbas et al. (2007) reported no idea on wither ECT is dangerous or not.
With regard to ECT guidelines three studies reported need to consider explicit ECT guidelines for patients undergoing ECT procedure these includes (Oyewumi
and Kazaria 1994, James et al. 2013 and James et al. 2010) 76.4%, 55.2% and 85% all of which were highly statistically significant.

**DISCUSSION OF FINDINGS**

In research, discussion of finding play a paramount role as it involves discussing the result findings of the included studies which usually follow after the data has been extracted and narrated. However, it the responsibility of the reviewer to develop an idea on how to discuss his findings for easy interpretation, also by giving consideration in terms of similarities and differences of the included study’s findings in a wider range by comparing it to other literatures (Boland et al. 2014). The focus of this systematic review was to identify relevant quantitative studies based on available evidence from the studies conducted in African countries in respect to health care professional knowledge and attitudes regarding ECT.

The main objective of this review was to:

i) To systematically review health care professional’s knowledge toward electroconvulsive therapy in Africa.

ii) To systematically review the attitudes of health care professional’s attitudes regarding electroconvulsive therapy in Africa.

Discussion of findings in this review will follow same pattern as cross-cutting theme regarding knowledge, attitudes and other outcomes for easy interpretation as presented in narrative synthesis from the previous chapter. Despite the heterogeneity in methodological quality design in terms of population characteristic, setting and variation in outcomes of the four included studies that reported on theoretical knowledge regarding ECT, (James et al. 2010, Oyewumi and Kazaria 1994 and James et al. 2009b) identified adequate knowledge among HCPs toward ECT 62 (91.2%), 74.2%, and p< 0.022, all of which were statistically significant. However, among the reasons associated with increase in their knowledge as stated by these studies were additional years of HCPs experience, orientation and information gained from other health professionals. This finding is supported by Lutchman et al. (2009) who reported HCPs knowledge response of 74% from his findings which was conducted in developed countries. Therefore, in order to increase HCPs knowledge, there is need for special training regarding ECT by those who are well experienced in ECT procedures and establishing ways to regain knowledge from other sources such as media.

In the present review, in terms of HCPs attitudes toward ECT, respondents from four studies out of six observational studies reported positive attitudes regarding ECT (James et al. 2009a, James et al. 2010, Oyewumi and Kazaria 1994 and James et al. 2013). Findings from these studies were highly significant statistically 80.5%, p < 0.001(61.1%), 69.7%, p < 0.017(70.7%). These studies highlighted factors associated to positive attitudes- factors included positive response from most patients after treatments, use of anaesthesia and muscles relaxants, ECT procedure is cheaper compare to some medications and additional years of experience of practitioners, all these factors have influence toward positive attitudes.

On the other hand, two studies reported negative attitudes toward ECT; the RCT and an observational study (Farrant et al. 1979 and James et al. 2009b) 86% and p < 0.001(64.5%). These two studies finding were also statistically significant. Although, the negativity reported was related to unmodified ECT (with no anaesthesia or muscles relaxants), other related adverse effect such as memory loss experienced by some patients also contributed. The positive attitude from this review finding in similar to findings of Alhadi et al. (2017) who reported positive attitudes among the respondent whenhe conducted studies within Saudi Arabia results of which also show statistical significant results with p <0.0001, respectively.

This review’s findings have considered related myths and misconceptions toward ECT and reported as outcomes in terms of ECT being misused/overused. Out of 3 studies that reported on this statements, two studies being the majority (James et al. 2009a and James et al. 2010) reported result which were statistically significant p < 0.001 and p <0.0001 (51%). Also, in this group of respondents among the highlighted reason as ECT is being misused/overused includes ECT were used among poorer populations, form punishment to incorporate patient and lack of restricted use of ECT guidelines. This is supported by
Alhadi et al. (2017) who reported 80% of respondents disagreed that ECT is being misused. In addition, there is disagreement from more than half of the respondents that reported ECT causes slight brain damage in studies by James et al. (2009a) and James (2013) with high proportion (81.9% and 63.2%, respectively) of respondents not agreeing with the statement. Among the reasons mentioned by the respondents was that ECT units provided facilities to offer modified type of ECT therefore causing no brain damage. This is supported by Alhadi et al. (2017) who reported ECT does not cause brain damage with a value of p < 0.0001 also which is considered significant.

In relation to considering recommended use of ECT guidelines by HCPs, the findings from all the three studies who reported on guidelines (James et al. 2013, James et al. 2010 and Oyewumi and Kazaria 1994) reported high proportion of respondents (76.4%, 55.2% and 85%, respectively) agreed with the requirement to have guidelines. Among the supported points raised include issuance of ECT guidelines would not cause any harm or intermingle with patients care, it reduces/minimises adverse side effects to the patients by using modified types of ECT which goes along with criteria in accreditation of the ECT units. The study findings go along with Martin and Elworthy (2013) from Scotland (developed country) who reported more than half of the Psychiatrists respondents from his study adhered with the use of ECT guidelines with (51%).

**CONCLUSION**

It is concluded that adequate knowledge exits among HCPs towards ECT in African countries. Likewise, HCPs attitudes were positive toward ECT, all of which were supported with reasons. On the other hand, considering the outcomes reported by these studies, most respondents disagreed with statements that ECT is misused or overused. However, more than half of the respondents disagreed that ECT causes brain damage. The use of recommended ECT guidelines and statement has been emphasized by the majority of the researchers.

**IMPLICATION TO PRACTICE**

Training and teaching HCPs about proper awareness regarding the nature of ECT intervention not only amongst themselves but also among patients, their relatives and public during clerkship or via media as this will improve their positive attitudes. Assessing health care practitioner’s knowledge after each psychiatric posting in ECT ward/units either by exams or tests as this will increase their theoretical knowledge regarding ECT.

**RECOMMENDATIONS**

Future recommendations or areas that need to be addressed include:

A true blinded RCT design with a multiple centre approach rather than single centre across African countries using validated tools with sufficient population should be considered.

Published studies/papers with good methodological approach in determining Health care practitioners in terms of their knowledge and attitudes regarding ECT, this will play a pivotal role in conducting systematic literature review because only publish work are considered.

The review should be considered to have implication for decision making, health intervention and policy development.

**LIMITATIONS**

The approach of this systematic review was aimed to answer the research question as clearly stated in the protocol. Meanwhile, considering the nature of the review which emphasises on published studies and restricted to English language only, this could possibly have contributed to selection bias or language bias. So also, lack of similarities within studies about population, setting, intervention, studies design and outcomes (heterogeneity) might have contributed in limiting data interpretation in this review. Similarly, in considering the timescale in the process of search strategies from the search engine, critical appraisal and data extraction despite some help from the second reviewer, this also contributed to some limitations.
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