Integrating Traditional Bone-Setting and Orthopaedic Medicine Practices in the Management of Fractures in Nigeria: Community-Based Rehabilitation Model in Perspective

Fidelis Terhemen Iyor[1*], Ajediran Idowu Bello[2]

1. Benue State University Teaching Hospital, Makurdi, Benue State, Nigeria
2. School of Biomedical and Allied Health Sciences, College of Health Sciences, University of Ghana, Ghana

ABSTRACT

Despite the documented advancements in orthodox medicine, traditional bonesetters (TBS) continue to be well patronised for the management of musculoskeletal injuries in low- and middle-income countries such as Nigeria. However, the practice of traditional bone-setting is often marred by the lack of trust and belief among orthodox healthcare practitioners on the one hand, and the serious post-fracture complications associated with this practice, on the other. The identified downsides have resulted in the stakeholders' call for the integration of TBS into the national orthodox healthcare services in Nigeria. Despite efforts toward the integration, implementation and realisation remain unfulfilled. One identified potential missing link is the lack of a community-oriented pathway such as the community-based rehabilitation (CBR) model in the previous efforts.

This brief review aims to elucidate the concept of CBR in relation to the proposed integration process. It highlights the need for integration, the notions of the CBR model as well as the conceptual framework for CBR. CBR has been showcased as a globally accepted model which encompasses pragmatic strategies or policies for community managers and stakeholders in a wide range of areas for people in need of essential services. It can be a suitable model for integrative management of fracture cases.

***Key words**: community, traditional bone-setting, health systems, developing nations, integration, orthopaedic medicine*

* **Corresponding Author:** Fidelis Terhemen Iyor, Benue State University Teaching Hospital, Makurdi, Benue State, Nigeria. Email:iyor2@yahoo.co.uk

INTRODUCTION

Traditional medicine practice entails the adoption of alternative or non-conventional modes of care using herbs, animal and mineral substances, or other methods based on social, cultural, and religious principles that are peculiar to a particular community (Borokini & Lawal, 2014; Omoregie, Aliyu, Danjuma, & Folashade, 2015). Traditional medicine has been part of African culture from time immemorial and still enjoys patronage despite the remarkable advancements in orthodox medicine. In comparison with other selected African countries, it is estimated that about 86% of Nigerians use traditional medicine, and over 200,000 traditional medicine practitioners are believed to be in Nigeria (Adefolaju, 2014). The relative patronage of traditional medicine practitioners and their distributions per country are indicated in Table 1. The practice of traditional medicine is dependent on the background training and personal interest of an individual towards specific specialty areas. Among the practitioners in Nigeria, traditional bonesetters (TBS) are rated highest in terms of the patronage they receive across the strata of the Nigerian society (Dada, Yinusa & Giwa, 2011). According to the authors, about 85% of clients in need of fracture care are reported to have initial consultations with TBS. This was corroborated by another previous report that TBS provides about 70-90% of fracture care in some parts of Nigeria (Nwachukwu, Okwesili, Harris, & Katz, 2011).

Table 1: Country Distribution of Indigenous Traditional Medicine Providers and the Patronage (WHO, 2019)

Countries	Indigenous Traditional Medicine Providers	Patronage per Population (%)
Nigeria	200,000	70–86
Ghana	20, 000	60–79
Benin	7,500	80–99
South Africa	--	1–19
Senegal	1000	--
Cameroon	--	1–19
Cote d'Ivoire	20,000	80–99
Gabon	3000	80–99
Gambia	3000	--
Liberia	1500	60–79
Mali	5000	80–90

Despite the popularity of TBS in Nigeria, there are still issues with their perception, particularly among the orthodox medicine practitioners (OMPs), citing the vulnerability of clients under their care as a major concern. The perception is born out of the informal training that characterises the practice of TBS in fracture management. Anecdotally, clients with somewhat severe fractures who patronise TBS often end up with serious post-fracture complications including infection, e.g., osteomyelitis, delayed or non-union, heterotrophic ossification, avascular necrosis as well as extremity gangrene and, in some instances, death. Incidentally, the complications are usually brought to hospitals in a deplorable state. Moreover, the practice of TBS is somewhat shrouded in mystery, given the lack of clear-cut evaluation for definitive diagnoses which tends to favour practice without a clear-cut scope (Dada et al, 2011). Of more crucial concern is the lack of regulation and standardisation of TBS practice regarding fracture management, thus exposing clients to further risk of health complications. Contrarily, OMPs receive formal training in orthodox medicine and are certified by recognised universities, having met all requisite criteria. Suffice to state that, the practice of OMPs is supported by scientific principles informed by international standards and regulated by professional bodies. In view of the continuing popularity of TBS among their patrons (Chowdhury, Khandker, Ahsan & Mostafa, 2011; Aderibigbe, Agaja & Bamidele, 2013), the existing lack of integrative practice continues to undermine confidence, trust, safety, and optimal management outcomes. Although the clamour for such integration has received supports from various observers and commentators, the implementation is still laced with many challenges. A potential missing link yet to be explored is the role and position of TBS in a community-oriented programme such as community-based rehabilitation (CBR).

Community-based rehabilitation comprises measures taken at the community level to build on locally available resources within the community with the aim of providing beneficial service, while involving those who are in need, their families, and their community members (Samuel, 2015). The concept of CBR has however evolved over the years. The CBR system components encompass technology, service delivery, community involvement, and close cooperation with various organisations to support people with disabilities (Olaogun, Nyante & Bello, 2009; Seijas et al, 2018). The focus of CBR is partly geared towards enhancing the quality of life for people with disabilities and their families, meeting their basic needs, and ensuring inclusion and participation. The strength of CBR is premised on its principles of accessibility, equality, inclusiveness, and participation, thus representing the ideal approach to ensure the desired integrative healthcare

system. The aim of this short review is to demystify the concept of CBR as the facilitating agent for integrating the practices of TBS and OMP.

Community-Based Rehabilitation Notions

Community-based Rehabilitation (CBR) connotes the philosophy of empowerment of the people with disability in part through the active involvement of local communities. Traditional bonesetters are members of the community; hence they are important stakeholders. The basic concept of CBR is premised on the decentralisation of responsibility regarding service provision and mobilisation of human and financial resources to community level organisations (WHO in 1978, as cited in Samuel, 2015). A CBR programme is normally developed in response to one or more activities within one or a combination of the following five key components: education, employment, health, livelihood, and social services (Seijas et al, 2018). Healthcare provision is basic to members of the community; thus, harnessing the available resources within the community towards achieving the rehabilitation goal aptly defines the concept of CBR. According to Olaogun et al (2009), the two notions of CBR must guarantee:

1. A broad-based transfer of knowledge and skills in the rehabilitation of people with disabilities to their families and members of the community, in order to ensure the availability of rehabilitation to those in need.
2. An attitudinal change among healthcare providers by conceding that clients and people with disability have equal rights and privileges in the community.

In line with the above notions, since TBS bonesetters are important stakeholders in the provision of healthcare in the community, their integration into mainstream orthodox health care, through CBR, could be seen as a passage to boost healthcare accessibility at the community level. Hence, there is a need to form a progressive partnership with orthodox OMPs practitioners towards empowering community members, including TBS bonesetters, on healthcare-seeking agenda, and for the attainment of quality healthcare at personal and societal levels.

The Need for Integration

Orthopaedic surgeons/physicians are often sceptical about the mode of practice of TBS, given the informal way of receiving training and acquiring skills by the latter, coupled with the lack of documentation and regulation (Dada et al, 2011). The indiscernible forms of training has implications for serious post-fracture

complications arising from complex fractures (OlaOlorun, Oladiran & Adeniran, 2001; Nwadiaro, Nwadiaro, Kidmas, & Ozoilo, 2006). On the other hand, TBS bonesetters are reported to have attained remarkable success in the management of simple fractures and dislocations, comparable to their counterparts in orthodox medicine in Nigeria (Omoregie et al, 2015). The patrons of traditional bone-setting hinge their predilection for TBS on easy accessibility, cheaper cost, quick care, cultural belief, and pressure from family members and friends (Dada et al, 2011). Moreover, with the current socio-economic situations and the types of health needs in Nigeria, traditional bone-setting appears to be the mainstay for a segment of the population, and its abrogation appears to be impossible (Agarwal & Agarwal, 2010). The most satisfactory plan will be to find the common ground for integrative practice.

Realistically, the integration of traditional bone-setting into orthopaedic medicine practice remains the time-honoured strategy to ensure parity in healthcare choices among Nigerians (Dada, Giwa, Yinusa, Ugbeye & Gbadegesin, 2009; Nwachukwu et al, 2011; Odatuwa-Omagbemi, Enemudo, Enamine & Esezobor, 2014). In a bid to achieve this overarching goal, several measures have been advocated, notably, formal training for the TBS and their incorporation into the primary care system in Nigeria (Dada et al, 2011; Onyemaechi, Itanyi, Ossai & Ezeanolue, 2020). In addition, the West Africa Health Organisation (2019) came up with the following recommendations as the way forward to ensure a viable integration:

1. Developing a protocol for the evaluation of traditional medicines with proven quality, safety, and efficacy for the Economic Community of West African States (ECOWAS).
2. Promoting the establishment of functional Centres of Excellence on Traditional Medicine in the ECOWAS Region.
3. Entreating the region's health authorities to allocate substantial funds for the promotion of traditional medicine in the countries.

Despite the above moves, there are still glaring challenges arising from the insufficient cooperation as well as the poor coordination on the part of all the stakeholders to drive the move (Gyoh, 2010). The existing breach thus demands a pragmatic approach that embraces social integration at the community levels, taking empowerment of the community members as the hallmark of the process. However, the primary healthcare (PHC) system, which is supposedly meant to facilitate such proposal has failed to meet its mandate in Nigeria. Although the

impact of CBR may be low in Nigeria, its amenability to community-oriented activities rather than the Government's involvement with lack of political will, places it at an advantage over primary healthcare. For instance, a scoping literature review on CBR in Nigeria by Bashir, Hassan and Ibrahim, 2020 reported two studies with meaningful impacts on people with disabilities in Plateau and Akwa Ibom states. The reported studies revealed improvements in four elements of livelihood such as skill development, self-employment, wages employment, and financial services (Effiong & Ekpenyong, 2017), as well as improved independent living, vocational skills acquisition, gainful employment, improved mobility, economic reintegration in the community and orientation skills in the society (Asibi, Ukwo & Kwalzoom, 2017).

Community-Based Rehabilitation as a Conceptual Framework

The World Health Organisation (WHO) originally conceptualised CBR as a service delivery method making use of community resources to bring healthcare and rehabilitation services closer to people with disabilities (Seijas et al, 2018). Initial CBR programmes in the '80s of the last century were focussed on the provision of physiotherapy, assistive devices, and medical interventions close to where people are living. The CBR concept however evolved into a strategy with a broad focus on inclusion of people with disabilities in all spheres of life. The health perspective has been re-defined as a strategy to promote, support and implement essential or basic rehabilitation activities at the community level and, where needed, to facilitate referrals to access more specialised rehabilitation services (WHO, 2010). This evolution places a premium on CBR as an essential tool for integrating traditional bone-setting into orthodox medicine practice using primary health care as enabler of the process. Despite this opportunity, studies on CBR as a vehicle for such integration are lacking in the literature.

Many different approaches have been suggested to achieve integration of TBS into the orthodox medicine practice in Nigeria. One plausible approach is the appointment of an impartial third-party organisation that would appeal to the traditional and orthodox groups of practitioners with the view to bring the two parties together (Owumi, Taiwo & Olorunnisola, 2013).The third-party (or neutral) groups may include faith-based organisations, churches, community-based youth group movements, non-governmental organisations, women's group movements in a community, as well as advocacy groups for different health conditions. The third party must enable both parties to identify common

goals and to understand the possible roles for their distinct approaches in an integrated scheme.

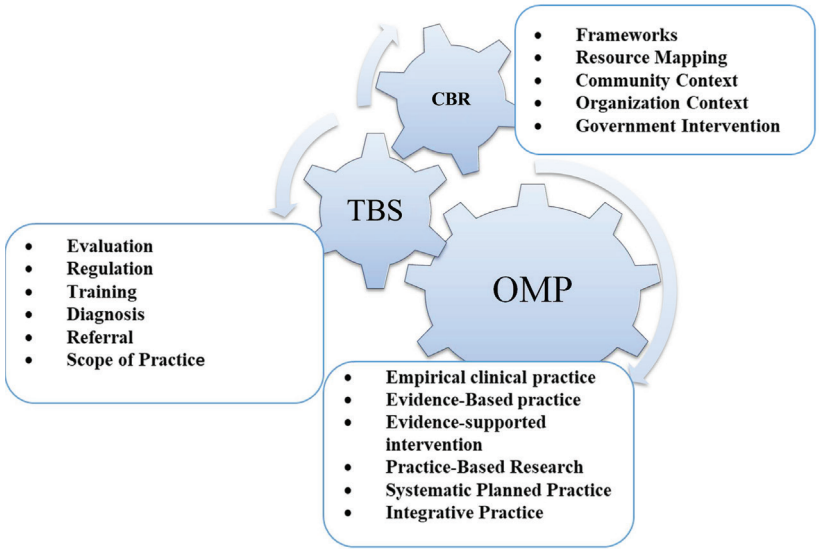
In Nigeria, most CBR projects are run by missionary organisations with support from foreign Non-Governmental Organisations (NGOs). Although there are pockets of undocumented reports in Nigeria regarding the partnership between the CBR projects and orthodox OMPs practitioners in the rehabilitation of people with various disabilities, TBS are yet to be integrated into such partnership for bone fracture management. The reason could be ascribed to the practice approach of TBS which contradicts the beliefs of the managers of CBR projects and the supporting NGOs. Many of the CBR projects are however known to partner with the TBS in the area of identification of clients in need of intervention. Given the organisational structure of the Nigerian socio-cultural set-up, including the influence of the high-class individuals, the CBR model may be well-suited for the purported third-party role, with emphasis on linkage, collaboration, training, referrals and research as the focal points.

Linkage

Community-based rehabilitation typically forms a central connecting point for the community, OMPs and TBS, as illustrated in Figure 1.

Fig. 1: Conceptual Framework for Integrating TBS and OMPs

Personal interaction of the authors with TBS in Tiv Land (North-Central Nigeria)



shows some level of willingness on the part of the bonesetters to cooperate with the orthodox systems. However, the missing link has always been the rightful platform to facilitate the collaboration in such a way that professional identity of both parties are maintained and safeguarded. In this regard, the dignity of the TBS (in particular) during the process will not be at stake. Community-based rehabilitation programmes could exert a positive influence on the attitude and beliefs of the community members for the benefit of the clients owing to the impending integrative knowledge and way of thinking. Using a CBR model, the complex therapeutic procedures could be demystified and simplified to the understanding and acceptance of the common man at the community level. The exemplary role of Christoffel Blinden Mission (CBM) in Nigeria is a case in point. Based on the authors' experience as key players in the community project under the aegis of CBM-sponsored CBR programmes in some states of Nigeria, the success recorded in integrating orthodox physiotherapy principles into the community is a clear signal of the feasibility of the CBR model for integrating traditional bone-setting and orthodox medical practice. The exemplary role entails mapping local resources and engaging communities, churches, mosques, and local health facilities to identify people with disabilities, including those with post-fracture complications. The identified people could either be managed locally or referred to a specially assembled team of professionals for appropriate management. Although the role has largely been one-sided in favour of OPMs, it can be expanded to TBS to utilise the services of both parties and ensure referral where such is found appropriate.

Collaboration

The TBS offer direct contact care at community level, which places them at an advantage as major stakeholders in CBR. According to Omololu, Ogunlade and Gopaldsani (2008) and Omoregie et al. (2015), about 85% of people with fractures in Nigeria consult TBS first. Indeed, traditional bone-setting has been found to show remarkable success in the management of close and simple fractures as well as joint dislocations (Omoregie et al, 2015). It thus follows that the indigenous knowledge inherent in the TBS can be enhanced to enable them to identify the scope of their practice and make necessary referrals to OMPs to ensure safe and quality care of people with fractures. In that case, the TBS would be seen to practice in a discrete pattern that aligns with acceptable standards. On the other hand, the OMPs could be educated on the potential role of the TBS at the grass roots, based on their popularity, and be well-abreast of their practices. If

adequately trained in the basics of orthopaedic care, TBS may provide essential and culturally relevant health services to their communities. They can serve as the first point of contact at the primary healthcare level, thereby reducing the burden on secondary and tertiary health institutions (Owumi et al, 2013). For instance, Kwame (2021) found a positive attitude towards integration of orthodox and traditional medicine among traditional healers, healthcare service consumers and orthodox healthcare practitioners in the Northern Region of Ghana. The author advocated an integrative model to allow the use of medical innovations in traditional medical practice (e.g., X-ray), support client co-referrals, ensure collaborative efforts towards ensuring clients' wellness, establish a traditional medicine unit at the out-patient departments for healthcare choice, adjust curriculum to incorporate the rudimentary knowledge of traditional medicine while also creating space for cross-information and information sharing among the stakeholders.

One of the avoidable downsides of traditional bone-setting is the lack of accessibility to assistive devices. Through CBR programmes, local resources (human and materials) can be harnessed to provide cost-efficient and cost-effective devices similar to the custom-made brand. Such devices include crutches, wheelchairs, ankle-foot orthotics, toe-raise and slings that can be made by engaging community vocational operators including cobblers, carpenters, welders and tailors. In this case, the stakeholders in CBR can be encouraged to utilise the services of TBS, provided that the service is within their scope and they are trusted to produce quality care in light of the needs and convenience regarding the accessibility of the services and evidenced-based approach (Nganwa, Batesaki & Mallya, 2013).

Training

Several authors have suggested training provision for the TBS, in particular for training and standardisation of the skills (Dada et al, 2011; Onyemaechi et al, 2020). While this suggestion is plausible, it must imbibe the principle of integration. It is the candid view of the authors of the current review that such training must not be anchored by the OMPs. It is probable that the anxiety to safeguard professionalism would not encourage orthopaedic professionals to share more skills and resources with the TBS due to a lack of trust and confidence in the competence of the TBS. Interestingly, the TBS are also aware of the level of mistrust among OMPs towards them. This scenario can be alleviated by implementing CBR programmes through which trainings are organised at the community level

for all the stakeholders in the project, i.e., TBS, clients, family, and community members. Also, there is a training need for the OMPs on attitudinal and behavioural change towards the process, to be able to engender compliance and acceptance of TBS and their operation within the communities. To ensure mutual respect among the stakeholders, the facilitation of workshops and interventions at the hospital and community levels, in this regard, should be anchored by the key players in CBR projects such as Non-Government Organisations. This move will not only preserve the values of the TBS but also create positive sensitivity towards genuine collaborations among the stakeholders.

Referrals

One of the seemingly identified challenges with traditional bone-setting practice is the absence of referral by the practitioners (Dada et al, 2011). The lack of a referral mechanism between the two groups is occasioned by the lack of integration. Through the proposed concept of the CBR programme, the TBS will be sure of their limits and ensure timely referrals to the OMPs to forestall avoidable post-fracture complications. More often, complicated fracture cases are not referred to the hospital which often potentiates gangrenous extremities and eventual amputation in the long run. Some of the problems militating against referral can be linked to both clients' and providers' determinants. The former could range from high cost of hospital services, perceived long protocol, and ardent belief in the attached values, while the latter's determinants may include unwillingness to refer, lack of confidence and belief, and personal core values. Referral can be facilitated in CBR projects from community centres and outreaches to big hospitals in many ways, including provision of transport and looking for donors to defray hospital fees. Undoubtedly, introducing the CBR programme to mediate the integration of TBS and OMPs will drive the referral system.

Research and Output Disseminations

Most studies on TBS are hospital-based and would not yield answers to many pertinent issues. In Nigeria, with the highest number of with highest number of people with living disabilities in Africa, only two impact studies on CBR were identified in a scoping literature review (Bashir et al, 2020). Community-based rehabilitation is not excessively concerned with constricted clinical rehabilitation questions, but with wider issues involving models of service delivery, community participation, empowerment, and improvement of social conditions of persons

with disabilities (Udoh, Gona & Maholo, 2013). Key players in CBR may need to explore the community further, through research, to understand the social and cultural background of bone-setting practice in various communities in order to give direction to policy formulations concerning integrative model of healthcare delivery. The CBR-oriented research should involve the generation of pragmatic information through qualitative research. The output of such exploration should be made available to those who need it, via the right platforms.

CONCLUSION

Traditional bonesetters are strategically placed in the community, thereby making them potential sources of succour to individuals in need of fracture management. Given the high patronage of TBS, its integration with the OMPs in the management of fractures would provide the desired health outcome. Community-based rehabilitation model is seen as a useful tool for integrating TBS and OMPs due to its wide context to promote best practices, considering the combined advantages of western knowledge and acceptable cultural practices. Incorporating the CBR concept to drive the integration will engender self-appraisal among the stakeholders to appreciate their roles, with the view to refine and promote good practice. This review has great implications for better management of fractures and the attendant complications in Nigeria, especially considering the high patronage of TBS. Integration of TBS and OMPs through the CBR model may facilitate better access to safer healthcare for fracture management of community dwellers. Adoption of the CBR model could put an end to the long-standing bewilderment that continues to trail the integration process and serve as a vehicle for integrative healthcare in Nigeria.

REFERENCES

Adefolaju, T. (2014). Traditional and orthodox medicine system in Nigeria: The imperative of a synthesis. *American Journal of Health Research 2*(4), 118-124. https://doi.org/10.11648/j.ajhr.20140204.13

Aderibigbe, S.A., Agaja, S.R., & Bamidele, J.O. (2013). Determinants of utilisation of traditional bone setters in Ilorin, North Central Nigeria. *Journal of Preventive Medicine and Hygiene, 54*, 35-40.

Agarwal, A., & Agarwal, R. (2010). The practice and tradition of bone-setting. *Education for Health, 23*(1), 225.

Asibi, R, A., Ukwo, C. A., & Kwalzoom, P. (2016). Effectiveness of community-based rehabilitation programme for persons with special needs in Plateau state. *International Journal of Preventive and Public Health Sciences*, *2*(1), 5-10.

Bashir, A.H., Hassan, A.B., & Ibrahim, Y.G. (2020). Community-based rehabilitation in Nigeria: A Scoping Study of Literature. *Disability, CBR & Inclusive Development, 31*(3). https://doi.org/10.47985/dcidj.389

Borokini, T.I., & Lawal, I.O. (2014). Traditional medicine practices among the Yoruba people of Nigeria: a historical perspective. *Journal of Medicinal Plants Studies, 42*(6), 20-33.

Chowdhury, M.A., Khandker, H.H., Ahsan, K., & Mostafa, D.G. (2011). Complications of fracture treatment by traditional bone setters at Dinajpur. *Dinajpur Medical College Journal, 4*(1), 15 - 19.

Dada, A., Giwa, S.O., Yinusa, W., Ugbeye, M., & Gbadegesin, S. (2009). Complications of treatment of musculoskeletal injuries by bone setters. *West African Journal of Medicine, 28* (1), 43-7. https://doi.org/10.4314/wajm.v28i1.48426 PMid:19662745

Dada, A.A., Yinusa, W., & Giwa, S.O. (2011). Review of the practice of traditional bone setting in Nigeria. *African Health Sciences*, *11* (2): 262-265.

Effiong, U.U., & Ekpenyong, O. (2017). Community-based rehabilitation services and livelihood enhancement for persons with disabilities in Nigeria: A case study of Akwa Ibom state. *Journal of Sociology, Psychology and Anthropology in Practice, 8*(1), 62-77

Gyoh, S.K. (2010). Traditional Doctors: Allies or Foes of ARSPON? Presidential Address at The 3rd annual scientific conference of the association of rural surgical practitioners of Nigeria, 17th - 20th NOVEMBER 2010. Accessed at Http://Www.Ifrs-Rural.Com/ on 18/7/14, 12:28 pm

Kwame, A. (2021). Integrating traditional medicine and healing into the Ghanaian mainstream health system: voices from within. *Qualitative Health Research, 31*(10), 1847-1860. https://doi.org/10.1177/10497323211008849 PMid:33980093 PMCid:PMC8446885

Nganwa, A.B., Batesaki, B., & Mallya, J.A. (2013). The link between health-related rehabilitation and CBR. In Musoke G, Geiser P (Eds). Linking CBR, disability and rehabilitation. *CBR Africa Network*; 59 - 70.

Nwachukwu, B.U., Okwesili, I.C., Harris, M.B., & Katz, J.N. (2011). Traditional Bonesetters and contemporary orthopaedic fracture care in a developing Nation: Historical aspects, contemporary status, and future directions. *The Open Orthopaedics Journal, 5*, 20-26. accessed at http://www.ncbi.nlm.nih.gov/pmc/articles on 18/7/14, 11:44 am https://doi.org/10.2174/1874325001105010020 PMid:21270953 PMCid:PMC3027080

Nwadiaro, H.C., Nwadiaro, P.O., Kidmas, A.T., & Ozoilo, K.N. (2006). Outcome of Traditional Bone Setting in the Middle Belt of Nigeria. *Nigeria Journal of Surgical Research, 8* (1 - 2), 44- 48. https://doi.org/10.4314/njsr.v8i1.54817

Odatuwa-Omagbemi, D.O., Enemudo, R.E., Enamine, S.E., & Esezobor, E.E. (2014). Traditional bone setting in the Niger Delta region of Nigeria. *Nigeria Journal of Medicine, 23* (2), 157-61.

Olaogun, M.O.B., Nyante, G.G., Bello, A.I. (2009). Overcoming the barriers for participation by the disabled: An appraisal and global view of community-based rehabilitation in community development. *African Journal of Physiotherapy and Rehabilitation Sciences, 1* (1), 24-29. https://doi.org/10.4314/ajprs.v1i1.51312

OlaOlorun, D.A., Oladiran, I.O., & Adeniran, A. (2001). Complications of fracture treatment by traditional bonesetters in Southwest Nigeria. *Family Practice, 18*(6), 635 - 637. https://doi.org/10.1093/fampra/18.6.635 PMid:11739353

Omololu, A.B., Ogunlade, S.O., & Gopaldsani, V.R. (2008). The practice of traditional bone-setting: training algorithm. *Clinical Orthopaedics and Related Research, 466* (10), 2392-2398. https://doi.org/10.1007/s11999-008-0371-8 PMid:18612711 PMCid:PMC2584317

Omoregie, E.H., Aliyu, I.J., Danjuma, K.C., & Folashade, K.O. (2015). Integrating traditional medicine practice into the formal health care delivery system in the new millennium-The Nigerian Approach: A Review. *International Journal of Life Sciences, 4*(2), 120-128.

Onyemaechi, N.O., Itanyi, I.U., Ossai, P.O., & Ezeanolue, E.E. (2020). Can traditional bonesetters become trained technicians? Feasibility study among a cohort of Nigerian traditional bonesetters. *Human Resources for Health 18*, 24. https://doi.org/10.1186/s12960-020-00468-w PMid:32197617 PMCid:PMC7085192

Owumi, B.E., Taiwo, P.A., & Olorunnisola, A.S. (2013). Utilization of traditional bonesetters in the treatment of bone fracture in Ibadan North Local Government. *International Journal of Humanities and Social Science Invention, 2*(5), 47-57) Accessed at: http://www.Ijhssi.Org/Papers/ On 18/7/14, 12:13 Pm

Samuel, J.U. (2015). Utilization of community based rehabilitation for people with disabilities in Nigeria: The way forward. *European Scientific Journal 11*, (25). ISSN: 1857 - 7881 (Print) e - ISSN 1857- 7431.

Seijas, V.A., Lugo, L.H., Cano, B., Escobar, L.M., Quintero, C., Nugrah, B., & Gutenbrunner, C. (2018). Understanding community-based rehabilitation and the role of physical and rehabilitation medicine. *European Journal of Physical and Rehabilitation Medicine, 54*: 90-9. https://doi.org/10.23736/S1973-9087.16.04530-5 PMid:27996220

Udoh, S., Gona, J., & Maholo, C. (2013). Evidence base for CBR. In: Musoke G, & Geiser P (Eds), *Linking CBR, Disability and Rehabilitation.* (pp 90 – 105). CBR Africa Network.

West Africa Health Organisation (2019). Practitioners of traditional and conventional medicine meet to promote collaboration. Downloaded 20/1/2022. Available at https://www.wahooas.org/web-ooas/pt/node/2110

World Health Organisation (2010). Community-based rehabilitation: *CBR guidelines. Health component*. Available at shttps://www.who.int/publications/i/item/9789241548052