



The Need of Patient Education to Improve Medication Adherence Among Hypertensive Patients

Ching Siang Tan

Article Info

Received date: 16 Dec 2020

Accepted date: 27 Dec 2020

Published date: 31 Dec 2020

Keywords:

patient education, medication adherence, hypertensive patient

ABSTRACT

Essential medicines have become indispensable to maintain and to improve our lives and health. Latest literature again reiterated that inappropriate use of medicine is a global phenomenon in both developed and developing countries still prevail. Poor adherence is associated with negative clinical outcome of the disease. It is important to note that about 50% of treatment failures are due to poor medication adherence and this results in substantial morbidity and mortality. Patient's belief and perception have been reported to influence medication adherence. Low rate of adherence was found strongly associated with patient's belief across the studies with chronic diseases with hypertension, coronary heart disease, diabetes, asthma and renal disease. Exploring the health beliefs of patients is vital to improve adherence and thereby blood pressure among the patients with hypertension. Lack of knowledge about usage of medication and various misleading perceptions of hypertension management have resulted in inappropriate use of medication especially medication adherence among community-dwelling patients with hypertension. Literatures classified non-adherence into primary and secondary. Primary non-adherence refers to medication is purposefully never filled or taken; Secondary non-adherence is defined as medication is not taken properly or continued as prescribed and further classified into intentionally and unintentionally. Patient education aims to train patient in the skill and self-management of their chronic disease by adapting to the treatment or lifestyle changes. Despite improving in patients' skill and self-care by providing information about the treatment, patient education could enhance their empowerment and medication adherence. Patient education is a basic right of the patients and healthcare members have responsible to provide such information. However, the authenticity of the available information is yet to be verified. Therefore, healthcare professional could play a vital role here to educate their patients about the appropriate information.

INTRODUCTION

Essential medicines are defined as those medicines that satisfy the priority health care needs of the population in a country [1]. Essential medicines have become indispensable to maintain and to improve our lives and health [2]. Additionally, essential medicines play a significant role in therapeutic assets of medical treatment options. Yet, medicines still are unaffordable, unavailable, unsafe and inappropriate used among many people around the globe [3, 4]. World Health organisation (WHO) has defined Quality Use of Medicine (QUM) as *"Patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirement, for an adequate period of time, and at the lowest cost to them and their community"* [5]. Australian National Medicines Policies has defined QUM as

"selecting management and suitable medicine wisely, and using medicines safely and effectively" [6].

WHO has estimated that more than half of all medicines are prescribed, dispensed or sold inappropriately in worldwide [7]. Moreover, 50% of the patients did not take medicine in appropriate manner [7] and this leads to the various complications of not well-managed chronic diseases. Latest literature again reiterated that inappropriate use of medicine is a global phenomenon in both developed and developing countries still prevail [8]. Common problems of inappropriate use of medicine have emerged, including the use of too many medicines per patient with the similar function (polypharmacy), inappropriate use of antibiotic, inappropriate self-medication especially prescription-only medicine, inappropriate use of injection when the regime can be substituted with oral

*Corresponding author:

Ching Siang Tan

Email: chingsiang9@hotmail.com

formulation and failure to prescribe according to guidelines [9]. In addition, people tend to forget the details given by doctor and pharmacist, not able to buy prescribed medicine at pharmacy due to financial problem, take initiative to stop consuming prescribed medicine, or taken the wrong dosage [10]. Patients were found to have greater tendency to store large quantities of medications in urban households with large percentages of the medication was being wasted [11].

Medicine Adherence Underpinned by Patient's Perception

WHO defines adherence as *"the extent to which a person's behaviour – taking medications, following a diet and/ or executing lifestyle changes, corresponds with agreed recommendations from a health care provider"* [12]. Worldwide, approximately \$177 billion was spent in direct and indirect health care cost annual due to poor adherence [13]. Medication adherence is one of the important aspects of the QUM. Poor adherence is associated with negative clinical outcome of the disease [14]. It is important to note that about 50% of treatment failures are due to poor medication adherence and this results in substantial morbidity and mortality [15, 16]. Patient's belief and perception have been reported to influence medication adherence [17-19]. Low rate of adherence was found strongly associated with patient's belief across the studies with chronic diseases with hypertension [20], coronary heart disease [21], diabetes [22], asthma [23] and renal disease [24]. Exploring the health beliefs of patients is vital to improve adherence and thereby blood pressure (BP) among the patients with hypertension [20]. Literature demonstrated that patient's beliefs about medicines yielded a significant predictor to medication adherence compare to social demographic factors [21]. To maximise treatment outcomes, a number of rigorous reviews were focused on the modifying factors, such as patient's beliefs, rather than non-modifying demographic variables [21, 25]. Many patients with hypertension did not adhere to antihypertensive medication because they had misperception towards hypertension or they were unconfident with their antihypertensive medication such as concern of potential adverse effects [26-28]. In overseas, lack of knowledge about usage of medication and various misleading perceptions of hypertension management have resulted in inappropriate use of medication especially medication adherence among community-dwelling patients with hypertension [28-30].

Possible reasons of non-adherence includes perceptual factors such as beliefs, attitudes and preference [21, 31]. Studies have shown that medication adherence was greatly influenced by patients' health belief towards hypertension [14]. Patient's beliefs play an important role in predicting medication adherence [22, 32]. Patient's judgement in the need of medication (necessity belief) relatively to their concern of adverse effect influences their motivation to start and continue with medication [33].

It must be noted that literature demonstrated that low medication adherence was observed among patients with

chronic diseases [34]. A wide variation of non-adherence rate (i.e. 7%-67%) has been reported among the patients with cardiovascular diseases [35]. Medication adherence among patients with hypertension was reported ranged from 50% to 70% [36]. It is evident that many patients with hypertension have obstacles to adhere to their medication regimens [4]. Approximately half of them were found to be non-adherent and leading to suboptimal clinical benefits [16, 37]. In Malaysia, only 35% of patients with hypertension have controlled BP level with antihypertensive medications [38]. A recent local study revealed that the reasons of poor medication adherence among patients with hypertension were due to misconception about side effect of antihypertensive medication and lack of knowledge towards hypertension management [31].

Differentiating the Type of Medication Non-adherence

Literatures classified non-adherence into primary and secondary. Of note, when medication is purposefully never filled or taken; or a new prescription is not filled by patient, it is called as primary non-adherence [36, 39]. While, secondary non-adherence is defined as medication is not taken properly or continued as prescribed [36]. Secondary non-adherence is classified into intentionally and unintentionally. Intentional non-adherence refers to patient's decision to stop medication on their own, either insufficient information about benefits or side effect of medication [40]. On the other hand, unintentional non-adherence occurs when patient is prevented from taking medication under unplanned circumstances, for instances, forgetfulness, does not understand instruction of use for the medication, language barriers or physical barrier to comply medication [41]. Taking a scrutiny into the medication adherence break down components; 12% of cardiovascular patients did not fill up prescription (primary non-adherence); 12% of the primary non-adherence was found by not started medication; while 29% of cardiovascular patients did not take prescribed medication for long term (secondary non-adherence), and only 47% of cardiovascular patients adhered to prescribed medication [42]. Another study revealed that the adherence rate was dropped to only 35% during the first year of treatment among the patients with hypertension [43].

Way Forward: The Need for Continued Patient Education to Mitigate Medication Non-Adherence and Wastage

Patient education is defined as *"A systematic experience in which a combination or a variety of methods are used. These might include the provision of information and advice and behaviour modification techniques, which influence the way the patient experiences his illness and/or his knowledge and health behaviour, aimed at improving or maintaining or learning to cope with a condition, usually a chronic one"* [44]. The concept of patient education is to train patient in the skill and self-management of their chronic disease by adapting to the treatment or lifestyle changes [45]. Despite improving in patients' skill and self-care by providing information about the treatment, patient education could enhance their empowerment

and medication adherence [46]. In addition, patient education could reduce the medical expenses in terms of long term care for both patients and society [45]. Patient education plays an important role in therapeutic plan by improving patients' self-management skills [47] and to enhance patient-centred perspective [48].

Patient education can be divided into clinical patient education (learning and teaching process are carried out at clinical setting) and community health education (education program emphasises on prevention, wellness and healthcare awareness among the community level)[49]. With the expert knowledge and proper training, health promoters generally have credibility to conduct patient education program. However, expertise alone does not make a good health educator. Three principles must be adopted in patient educational programme: (i) patients' belief and understanding of the aims of education program must be delivered and evaluated through some learning tools [50-52], (ii) established relationship between patients and healthcare providers [53, 54], and (iii) attention must be given to low self-esteem and non-vocal patients to change their health-related behaviors [55].

Preparation of patient education is important. Health educator needs to think through the objectives of the session, the way of conducting and the involvement of participants [56]. Jensen and Simvska reported that the optimal learning outcome could be achieved throughout active participation during learning process [57]. Whilst Ewles and Simnett added that learning methods should be varied in different ways i.e. books, leaflets, handout, poster, flip-chart, PowerPoint slides and others [56]. Health care provider could play an important role to educate patients in order to enable them to further understand their conditions and the given therapy [58]. Evidence demonstrated that patients want health information but some of them have difficulty in understanding and remember the information delivered by the health educator [59].

A recent local study revealed that a total of 20,799 excessive pills were returned by patients with hypertension at a single Malaysian government hospital, with a total cost of (Malaysian Ringgit) MYR 4,362.28 (equal to USD 1037) was wasted during the 8 months of study period with an average wastage of MYR 42.35 (equal to USD 10) per patient; changing medication by the doctor and death of patients were the most common reasons accounted for the wastage [60]. Lack of knowledge about usage of medication and various misleading perceptions of hypertension management have resulted inappropriate use of medication especially medication adherence among community-dwelling patients with hypertension [29, 30]. Within this context, a pharmacist whom traditional roles focus on medication dispensing and procurement have been serving well as a healthcare educator. Being an expert of medicines, a pharmacist is dedicated to provide medicine counselling to patients, taking into consideration their prescription, non-prescription, self-prescribed, herbal medications as well as the drug interaction[61].

CONCLUSIONS

Patient education is a basic right of the patients and healthcare members have responsible to provide such information. Healthcare providers could provide pertinent yet enough information to the patients and thus avoiding the development of confusion. Patients might obtain information from other sources, such as social media, friends, neighbour and family members. However, the authenticity of the available information is yet to be verified. Therefore, healthcare professional could play a vital role here to educate their patients about the appropriate information [62].

The evolving of patient education and the emerging of the new developments are expected from the healthcare professional. Currently healthcare professional have more access and training opportunity in patient education technique, such as counselling and motivational interview [63]. However, many healthcare professionals confronted challenging when educating patient because of limited time was allocated to cover all health topics [64]. Therefore, the development of patient education interventions is impeding with the direction of replacing a part of consultation time with providing tools for self-monitoring by patient themselves at outside of healthcare setting.

CONFLICT OF INTEREST

The authors declare no conflict of interest. This research did not receive any specific grant from funding agencies in the public, commercial or not-for-profit sectors.

REFERENCES

1. World Health Organization. Essential Medicines and Health Products. 2020 [cited 2020 21th December]; Available from: https://www.who.int/medicines/services/essmedicines_def/en/.
2. Organization, W.H., Towards access 2030: WHO essential medicines and health products strategic framework 2016-2030. 2017, World Health Organization.
3. Tan Ching, S., M.A. Hassali, and F. Saleem, A qualitative exploration of hypertensive patients' perception towards quality use of medication and hypertension management at the community level. *Pharmacy Practice (Granada)*, 2017. **15**(4).
4. Bieszk, N., et al., Detection of medication nonadherence through review of pharmacy claims data. *American Journal of Health-System Pharmacy*, 2003. **60**(4): p. 360-366.
5. World Health Organization, How to develop and implement a national drug policy. 2001.
6. The Department of Health. The National Strategy for Quality Use of Medicines – Australia. 2011 [cited 2018 14th April]; Available from: <http://www.health.gov.au/internet/main/publishing.nsf/content/nmp-quality.htm>.
7. World Health Organization, Promoting rational use of medicines: core components. *WHO Policy Perspectives on Medicines*, 2002. **5**: p. 1-6.
8. Bennadi, D., Self-medication: A current challenge. *Journal of basic and clinical pharmacy*, 2013. **5**(1): p. 19.
9. Istúriz, R.E. and C. Carbon, Antibiotic use in developing countries. *Infection Control & Hospital Epidemiology*, 2000. **21**(6): p. 394-397.

10. Homedes, N. and A. Ugalde, Patients' compliance with medical treatments in the third world. What do we know? *Health Policy and Planning*, 1993. **8**(4): p. 291-314.
11. Sweileh, W.M., et al., Storage, utilization and cost of drug products in Palestinian households. *International journal of clinical pharmacology and therapeutics*, 2010. **48**(1): p. 59.
12. World Health Organization, Adherence to Long-Term Therapies - Evidence for Action: Chapter 1-What is adherence? 2003.
13. World Health Organization. Adherence to Long-term Therapies: Evidence for Action. 2003 [cited 2016 19th December]; Available from: http://www.who.int/chp/knowledge/publications/adherence_report/en/.
14. Ambaw, A.D., G.A. Alemie, and Z.B. Mengesha, Adherence to antihypertensive treatment and associated factors among patients on follow up at University of Gondar Hospital, Northwest Ethiopia. *BMC Public Health*, 2012. **12**(1): p. 282.
15. Sokol, M.C., et al., Impact of medication adherence on hospitalization risk and healthcare cost. *Medical Care*, 2005. **43**(6): p. 521-530.
16. Ho, P.M., C.L. Bryson, and J.S. Rumsfeld, Medication adherence: its importance in cardiovascular outcomes. *Circulation*, 2009. **119**(23): p. 3028-3035.
17. Chakraborty, K., et al., Attitudes and beliefs of patients of first episode depression towards antidepressants and their adherence to treatment. *Social Psychiatry And Psychiatric Epidemiology*, 2009. **44**(6): p. 482-488.
18. Frank, E., D.J. Kupfer, and L.R. Siegel, Alliance not compliance: a philosophy of outpatient care. *Journal of Clinical Psychiatry*, 1995.
19. Horne, R., J. Weinman, and M. Hankins, The beliefs about medicines questionnaire: the development and evaluation of a new method for assessing the cognitive representation of medication. *Psychology and health*, 1999. **14**(1): p. 1-24.
20. Ross, S., A. Walker, and M. MacLeod, Patient compliance in hypertension: role of illness perceptions and treatment beliefs. *Journal of human hypertension*, 2004. **18**(9): p. 607-613.
21. Horne, R. and J. Weinman, Patients' beliefs about prescribed medicines and their role in adherence to treatment in chronic physical illness. *Journal of psychosomatic research*, 1999. **47**(6): p. 555-567.
22. Mann, D.M., et al., Predictors of adherence to diabetes medications: the role of disease and medication beliefs. *Journal of behavioral medicine*, 2009. **32**(3): p. 278-284.
23. Horne, R., Compliance, adherence, and concordance: implications for asthma treatment. *CHEST Journal*, 2006. **130**(1_suppl): p. 65S-72S.
24. Horne, R., et al., Haemodialysis patients' beliefs about treatment: implications for adherence to medication and fluid & diet restrictions. *International Journal of Pharmacy Practice*, 2001. **9**(3): p. 169-175.
25. Malcolm, S., et al., An examination of HIV/AIDS patients who have excellent adherence to HAART. *AIDS Care*, 2003. **15**(2): p. 251-261.
26. Jolles, E.P., et al., A qualitative study of patient perspectives about hypertension. *ISRN Hypertension*, 2013. **2013**.
27. Kusuma, Y.S., Perceptions on hypertension among migrants in Delhi, India: a qualitative study. *BMC Public Health*, 2009. **9**: p. 267-267.
28. Saleem, F., et al., Drug attitude and adherence: A qualitative insight of patients with hypertension. *Journal of Young Pharmacists*, 2012. **4**(2): p. 101-107.
29. Rajpura, J. and R. Nayak, Medication adherence in a sample of elderly suffering from hypertension: evaluating the influence of illness perceptions, treatment beliefs, and illness burden. *Journal Of Managed Care Pharmacy: JMCP*, 2014. **20**(1): p. 58-65.
30. Meinema, J.G., et al., Determinants of adherence to treatment in hypertensive patients of African descent and the role of culturally appropriate education. *PloS one*, 2015. **10**(8): p. e0133560-e0133560.
31. Tan, C.S., et al., A qualitative exploration of hypertensive patients' perception towards quality use of medication and hypertension management at the community level. *Pharmacy Practice*, 2017: p. 1074-1074.
32. Maguire, L.K., C.M. Hughes, and J.C. McElroy, Exploring the impact of depressive symptoms and medication beliefs on medication adherence in hypertension—a primary care study. *Patient education and counseling*, 2008. **73**(2): p. 371-376.
33. Hassali, M.A., et al. A National Survey on the Use of Medicines (NSUM) by Malaysian Consumers. 2015 [cited 2017 30th October]; Available from: <https://www.pharmacy.gov.my/v2/sites/default/files/document-upload/national-survey-use-medicine-iii-nsum-iii.pdf>.
34. Al-Ramahi, R., Adherence to medications and associated factors: A cross-sectional study among Palestinian hypertensive patients. *Journal Of Epidemiology And Global Health*, 2015. **5**(2): p. 125-132.
35. Turin, A., J. Pandit, and N.J. Stone, Statins and Nonadherence Should We RELATE Better? *Journal of cardiovascular pharmacology and therapeutics*, 2015: p. 1074248415578170.
36. Sabaté, E., Adherence to long-term therapies: evidence for action. 2003: World Health Organization.
37. Ewen, S., et al., Drug adherence in patients taking oral anticoagulation therapy. *Clinical Research In Cardiology: Official Journal Of The German Cardiac Society*, 2014. **103**(3): p. 173-182.
38. Ministry of Health Malaysia. Management of Hypertension. 2013 [cited 5 January 2015]; 4th edition:[Available from: <http://www.msh.org.my/>].
39. Solomon, M.D. and S.R. Majumdar, Primary Non-adherence of Medications: lifting the veil on prescription-filling behaviors. *Journal of General Internal Medicine*, 2010. **25**(4): p. 280-281.
40. Horne, R. and N. Evans, Concordance and medicines management in the respiratory arena. Newmarket, UK: Hayward Medical Communications, 2003: p. 1-12.
41. Cochrane, G., R. Horne, and P. Chanez, Compliance in asthma. *Respiratory medicine*, 1999. **93**(11): p. 763-769.
42. American Heart Association. "Statistics You Need to Know: Statistics on Medication." 2009 [cited 2017 12th January]; Available from: www.americanheart.org/presenter.jhtml?identifier=107.
43. Srivatsan, N., et al. Medication Adherence in the Real World. 2014 [cited 2017 11th January]; Available from: <https://www.cognizant.com/whitepapers/medication-adherence-in-the-real-world-codex1089.pdf>.
44. Engers, A.J., et al., Individual patient education for low back pain. 2008.
45. World Health Organization, Therapeutic patient education. Continuing education programmes for health care providers in the field of prevention of chronic diseases, 1998.
46. Livne, Y., I. Peterfreund, and J. Sheps, Barriers to patient education and their relationship to nurses' perceptions of patient education climate. *Clinical Nursing Studies*, 2017. **5**(4): p. 65.
47. Redman, B.K., When is patient education unethical? *Nursing Ethics*, 2008. **15**(6): p. 813-820.
48. Robinson, J.H., et al., Patient-centered care and adherence: Definitions and applications to improve outcomes. *Journal of the American Association of Nurse Practitioners*, 2008. **20**(12): p. 600-607.
49. Lorig, K. and V.M. Gonzalez, Community-based diabetes self-management education: definition and case study. *Diabetes Spectrum*, 2000. **13**(4): p. 234.
50. Balog, J.E., The concept of health and the role of health education. *The Journal of school health*, 1981. **51**(8): p. 461-464.
51. Becher, M., The health belief model and personal health behavior. *Health education monographs*, 1974. **2**: p. 324-373.
52. Miller, A., When is the time ripe for teaching? *The American journal of nursing*, 1985. **85**(7): p. 801-804.
53. Lorig, K., Patient education: a practical approach. 2001: Sage.
54. Lilja, J., The evaluations of drug information programs. *Social science & medicine*, 1985. **21**(4): p. 407-414.
55. Sackett, D., Methods for compliance research. *Compliance in health care*, 1979: p. 323-333.
56. Ewles, L. and I. Simnett, Promoting health: a practical guide. 1999: Baillière Tindall London.
57. Jensen, B.B. and V. Simovska, Involving students in learning and health promotion processes-clarifying why? what? and how? *Promotion & Education*, 2005. **12**(3-4): p. 150-156.
58. Kim, M.J., Communicating with patients about their medications. *The New England journal of medicine*, 1992. **327**(2): p. 131.

59. Oudman, E., et al., Procedural learning and memory rehabilitation in Korsakoff's syndrome-A review of the literature. *Neuropsychology Review*, 2015. **25**(2): p. 134-148.
60. Hassali, M.A., et al., The Characteristics of Drug Wastage at the Hospital, Tuanku Jaafar Seremban, Malaysia: A Descriptive Study. *Journal of Clinical & Diagnostic Research*, 2012. **6**(5).
61. Zargarani, A. and A. Mohagheghzadeh, Jamasp, an ancient Persian pharmacist. *Journal of Research on History of Medicine*, 2012. **1**(1 Feb).
62. Kreitzer, M.J., B. Kligler, and W.C. Meeker, Health professions education and integrative healthcare. *Explore: The Journal of Science and Healing*, 2009. **5**(4): p. 212-227.
63. Hulsman, R.L., Shifting goals in medical communication. Determinants of goal detection and response formation. *Patient Education and Counseling*, 2009. **74**(3): p. 302-308.
64. Hoving, C., et al., A history of patient education by health professionals in Europe and North America: from authority to shared decision making education. *Patient Education and Counseling*, 2010. **78**(3): p. 275-281.