

# STUDY ON WRITTEN DRUGS INFORMATION AND THEIR COMPARISON WITH ICH GUIDELINES AND LEAFLETS

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## ABSTRACT

Written drug information accompanying medicine cartoons can prove significant aid in aversion of medication errors as well as means of improving patient adherence. International conference on harmonization mandates that package inserts should contain sufficient information to guide physician, dispenser and patients. In Pakistan, main concern of manufacturers is only health care professionals thereby neglecting the needs of patients. It is, thus, need of the hour to bring uniformity among package inserts of all pharmaceutical companies of the country as well as to modify long established and stereotyped notion about package inserts in Pakistan and develop them in more patient oriented form in order to attain their maximum benefits and ensure the idea of 'informed health care' to patients.

**Key Words:** Written drug information, Pakistan, Patients, Medication errors.

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## INTRODUCTION

Written drug information (WDI) is defined as any written information about prescription medications that fall within three categories: Patient Package Inserts (PPIs), Medication Guides, Consumer Medication Information (CMI).<sup>1</sup> International conference on harmonization defines Package insert as; a leaflet containing information for the prescriber, the dispenser and the end user. (ICH)<sup>2</sup>

To control the incidences of 'medication errors', patient package inserts can prove to be most authentic and impeccable aid, especially if controlled strictly and effectively by regulatory bodies of the respective countries.<sup>3</sup> Written drug information, unfortunately, is an underexploited amenity as a means for enhancing user compliance and quality of life especially in countries like Pakistan where health care system lags behind other developed countries.<sup>4</sup>

In Pakistan, WDI that comes in the form of package inserts is governed by "The Drugs (labeling and

Packing) Rules 1986" which do contains guidelines for the label of innermost container of drug and also for the covering in which drug is packed, but is devoid of clear instructions on development of package inserts and other forms of WDI.<sup>5</sup> Therefore, it is the need of hour for Drug regulatory authority of Pakistan to bring focus on development of patient-oriented package inserts in order to improve health literacy of patients and ultimately enhancing their compliance towards treatment regimens.

A number of patients while even knowing the importance of leaflets do not show interest to read them because of their perception of incomprehensibility and overloaded information.<sup>6</sup> In Pakistan, package inserts (PI) currently aim at guiding prescribers without taking into account patients which are ultimate end users of medicines and have deliberate right to get informed in decision-making process regarding their health.

All of the above concerns demand a solution that may come in the form of 'Patient information leaflets'-an official and authentic script that entails special cautions, usage instructions, necessary introduction about actions of that medicine etc. but most importantly, it should use nonmedical terminology and easy to read format/layout and font size and must not be overloaded with unnecessary information. This notion may be new for a developing country with poor healthcare but is already practiced in the European Union since long under the title 'Patient Information Leaflets' and in U.S by the name

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of "Patient Package Insert" since 1968.<sup>7</sup>

### **Discernment of package inserts of medicines among various professional groups:**

Nurses are becoming vitally associated for enhancing comprehensibility, establishing targets and presenting instructions as evidently as possible while developing a good PIL.<sup>8</sup> Another study correlated perspectives of ultimate users and of different health care professionals (Physicians, Pharmacists) about its worth. Physicians support the usefulness of PILs for patients. Pharmacists' have expressed uncertainty over cost-benefit ratio of oral advices. Expenditure incurred on leaflets development and use. Results showed that entire pools of participants recognize PILs as means of increasing adherence and were well aware of its potential worth.<sup>9</sup> Majority of respondents (doctors, pharmacists and laypersons) consider package inserts as means of enhancing adherence and contentment whereas a few of them take it as a means of causing distraction and ultimately non-adherence.<sup>10</sup> Doctors seldom suggest their patients to study package inserts as they think extra explanation about adverse events after taking medication may frighten the patients and would cause non-compliance.<sup>11</sup>

### **Discernment of package inserts of medicines in laypersons:**

Awareness to use written information on drugs is strongly linked to literacy level of patients.<sup>12</sup> Study showed majority of users get written information about medicines but reading difficulty and apprehension inability render them useless. Therefore, medicine users have to rely on instructions given by doctor and relatives and lastly by pharmacists.<sup>13</sup> Patients are not appreciated to inquire information about their health related decisions leaving their demands of gaining knowledge unfulfilled, leading to poor discernment about written drug information.<sup>14</sup>

### **Association of socioeconomic status of patients with reading of package inserts:**

Probability of patients to see package inserts was associated with numerous user elements like socio-economic status, health status and education level.<sup>15</sup>

### **Association of gender with reading of package inserts:**

Gender also affects reading inclination of package inserts among other demographic factors as females are more likely to read written information on medicines as compared to males.<sup>16</sup>

### **Association of age with reading of package inserts:**

Survey pointed out that geriatric population

needs should be considered while designing leaflets including font size, use of complex terminologies etc.<sup>17</sup> As age increases, probability of studying written drug information decreases.<sup>18</sup>

### **Investigation of information sources about medicines among different professionals:**

Pharmacist can make use of their expertise on medicines knowledge to help patients modify complex therapeutic regimens, thereby increasing adherence & ultimately quality of life.<sup>19</sup>

### **To evaluate content and availability of package inserts:**

Number of NSAIDs leaflets available did not comply with number of medicine cartoons available indicating that accessibility and the usefulness of information in Thai leaflets was unsatisfactory<sup>20</sup>. The study categorized their results into 'major errors (missing information on interactions, drug uses, warnings etc.) and minor errors (missing data on clinical trials, formulae, quality of paper, use of English language only, font size etc.). None of the available leaflets were found complete in all aspects which reflect inattentiveness of healthcare authorities of Pakistan.<sup>21</sup> Analysis of PILs on high blood pressure reflected that few leaflets were containing insufficient information for patients while some PILs covered complete set of vital instructions in suitable native language.<sup>22</sup> Apprehension capability of PILs on drug interactions and contraindications etc. was evaluated by users and professionals based on standard guidelines to investigate quality of information, terminology used and pattern. Response demonstrated low apprehension status for 'contraindications' and 'interactions' thereby conveying complicated information to geriatrics, while remaining content was found to be satisfactory and understandable by patients.<sup>23</sup> Provision of leaflets with all medicine packages should be improved. Study also showed that mere inclusion of PILs in packages is not sufficient to ensure that it will be beneficial for patients.<sup>24</sup>

### **Assessment of understanding of package inserts by evaluation of find-ability and comprehensibility of information:**

A software named ABOP deals with three major problems which impede easy readability of PILs, like indiscriminate among instructions with respect to severity (e.g. warnings, precautions, contraindications and general instructions etc.), use of medical jargon and the repeated description of same instructions again and again. For instance, instead of using medical term 'glaucoma' it should be written as 'increased eyeball pressure'.<sup>25</sup> Traditional European Commission model leaflets are not patient focused and failed to address

comprehension issues of ultimate consumers.<sup>26</sup> Comprehension difficulties of package inserts designed by nurses were evaluated using 'Flesch Reading Ease score and the FOG and SMOG readability formulae'. The results of the study showed that criteria for designing leaflets and readability formulae need to be updated.<sup>27</sup> Estimation of comprehensibility of package inserts (Flesch test, FOG test and SMOG test) that came with non-prescription medicines in UK showed that to develop new layouts and patterns for more comprehensible PILs by drug producers is indispensable at the moment than any other amendments.<sup>28</sup> Dental PILs were analyzed for the criteria of Plain English Campaign's Crystal Mark to evaluate extent of clarity and comprehensibility. Selected PILs did not meet criteria and almost half of them were scored as 'fairly difficult' or 'difficult' to understand.<sup>29</sup> Majority of PILs in dental section failed to convey intended vital instructions and was fairly complicated to understand and apprehend.<sup>30</sup> A study concluded that patient-oriented 'tripartite model' of PILs validation can ensure improved usability of PILs by enhancing their content and presentation, which comprises of three parameters: Readability, Comprehensibility and communicative effectiveness.<sup>31</sup>

#### **Evaluation of impact of understandable package inserts:**

Lack of access to health knowledge create health disparities and would impede medication adherence. Various tools for involving patients are helpful in enhancing their health status but they cannot substitute counseling by health care professional. Thus, mutual decision-making and self-care by patients ensures more effective utilization of health resources.<sup>32</sup> PILs were significantly helpful in improving patient adherence to medication regimen, but due to difficulty in reading and understanding they failed to affect significantly patient's knowledge levels.<sup>33</sup> PILs should be highly appreciated for the sake of promoting user enlightenment. Continuous updating of PILs should become mandatory in order to certify them as basis for determining physician's capability, to establish their authenticity and homogeneity.<sup>34</sup> Use of PILs significantly aids professionals to facilitate patient's memory during 'informed consent' sessions.<sup>35</sup> Documents containing penned instructions on drug use must be explored with emphasis on productive and moralistic aspects.<sup>36</sup> Innovative research methodologies should be explored to analyze literature from which penned instructions are derived and to dismantle text.<sup>37</sup> Informed participants were well familiar with treatment they were receiving which increases their level of contentment, thus increasing compliance.<sup>38</sup> Provision of PILs to patients enhances their compliance rates, ultimately improved contentment and quality of life.<sup>39</sup>

#### **Impact of use of images in package inserts:**

Pictogram based patient information leaflets (P-PILs) for patients on hemodialysis were structured using 'Baker Able Leaflet Design'. Results of the study expressed patient's satisfaction on the use of P-PILs as a valuable teaching aid to help improve understanding level of hemodialysis patients.<sup>40</sup> A study on arthritis patients was based on the fact that benefit obtained from use of conservative leaflets was much low as compared to that of surrogate sources PILs containing charts and images for description of information.<sup>41</sup> Use of pictograms in PILs significantly enhances apprehension ability of patients irrespective of the education level and native language.<sup>42</sup> Another study concluded that abbreviations and emblems should not be routinely used unless authenticated by user-testing, and use of images rather than symbols along with appropriate language was preferred by users.<sup>43</sup> Use of images as well as precisely written information on drugs can evoke desire to read them in patients with low educational status.<sup>44</sup>

#### **Information in medicine package inserts- helpful or frightening!**

PILs should be presented in an impartial and judicious manner and maintain all the key messages about a medicine, still do not convey fearful messages that leads to non-compliance by patients. Strict controls need to be placed up on while designing leaflets which help patients to evaluate risk-benefit ratio of using a medication.<sup>45</sup> Delivery of explained instructions regarding risks associated with treatment positively impacts on patient's apprehension and contentment level as patients who received PILs with explained instructions on possible adverse consequences showed more awareness and thus greater contentment without causing confusion.<sup>46</sup> More research is needed to find ways to make PILs more useful and handy tool while avoiding confusion.<sup>47</sup> Evaluative Linguistic Framework (ELF) is easy to use systematic tool that effectively enhances provision of useful information to patients thereby fulfilling patient's demand of balanced information detailing benefits as well as associated risks.<sup>48</sup> Written Drug Information can prove to be worthwhile and beneficial as well as detrimental and affect patients adversely if there is imbalance in description of risks and benefits of using a medication. Negative impact of WDI may lead to frightening of patients thus discontinuation of therapy before intended time.<sup>49</sup>

#### **Comparison among package inserts of multinational and national pharmaceutical companies in Pakistan:**

It is need of the hour to take action in order to bring uniformity in the content PILs belonging to same

generic products but variable market names. This will reduce non-adherence issues arising from disoriented information conveyed by PILs.<sup>50</sup> Research evaluated package inserts of different national and multinational pharmaceutical companies of Pakistan and compared information in package inserts of prescription only and OTC products, indicating the need to bring uniformity and enforce standard pattern of package inserts for all manufacturers to be followed.<sup>51</sup>

### Comparison of Pakistani guidelines with guidelines of other countries:

Comparison of various written drug information materials among twenty-six different countries demonstrated inconsistency in information accessible to professionals and users. To resolve this issue, regulatory forces at national and international levels should promote alliance between countries and aim at continuous upbringing of their representatives.<sup>52</sup>

### Compliance with best available guidelines:

Applicability of PILs can be enhanced by adhering to EU guidelines as traditional PILs fail to give maximum benefit to their potential consumers.<sup>53</sup> Leaflet content showed discrepancies among three countries (U.S, U.K., Australia) on comparison with U.S. guidelines. Australian PILs comply well with guidelines, PILs in U.K. showed lapse in information while U.S. PILs got lowest rating.<sup>54</sup> Rarely PILs follow best practice guidelines available which require leaflets to contain both verbal and numerical descriptors at the same time e.g. 'rare (affects less than 1 in 1000 people)'. This prevents any under or overestimation of risks associated with drugs.<sup>55</sup> Packaging materials accompanying medicinal products in Pakistan do not strictly adhere to drug labeling and packaging rules 1986, which reflects negligence on part of regulatory bodies of country.<sup>56</sup> Most of available leaflets comply with Drug and cosmetics rules of India but some do not, indicating the need to enforce standard pattern for package inserts in compliance with available guidelines of the country.<sup>57</sup>

### CONCLUSION

PILs should be updated at the earliest and regulatory authority should frame guidelines/rules to resolve this vital issue of public interest. Patients should be the ultimate focus while developing new package inserts for medicines, furthermore, pharmacist and other health professionals should also be targeted. Patient's right to access informed health care is limited due to inadequate leaflet patterns and unavailability of written drug information for them to resolve this issue, there is a dire need to introduce concept of PILs (patient information leaflets) in Pakistan. Leaflets of multinational companies are

relatively better than national companies but none of the companies focuses layman consumer as their target. All leaflets are written in English which is not the native language of Pakistan and have the common problem of information overload. It is strongly recommended that PILs should also contain their Urdu translation in terms understandable to ultimate layman consumers. Package inserts in current situation reveals drawbacks on part of regulatory authorities. Complex terms, English language, information overload, too small font size, poor layout etc. are the points which must be focused in order to assure the idea of informed healthcare in Pakistan.

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## Study on written drugs information and their comparison.....

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Following authors have made substantial contributions to the manuscript as under:

**Naeem B:** Concept and design data collection.

**Ahmad M:** Drafting of manuscript.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.