Factors related to the (non-)use of optical low vision aids, a scoping review.

INTRODUCTION

In recent decades, several studies have been performed in the field of (non-)use of assistive technologies (ATs) and have found that many variables are likely to be involved in the decision-making process of whether a person with a disability uses or abandons their aids. In low vision rehabilitation, high variability rates and a variety of reasons for non-use of low vision aids has been reported.

An overview of the determinants of non-use of ATs has categorized factors related to the personal, AT, user's environment and interventions regarding the categories of factors that are associated with OLVA (non-)usage. Searches were conducted using the following online databases: Embase, MedLine, and ERIC without limitation on publication dates. A combination of key words and MeSH terms was used based upon the identified core concepts of the research question: (1) Low vision; (2) Assistive technology; and (3) Adherence.

A PRISMA flow chart was used to illustrated the study screening and selection process, which led to the inclusion of 21 studies (Fig.1). A combination of descriptive numerical analyses and a thematic analysis of the 21 identified studies was then performed.

RESULTS

The publication dates of the selected studies range from 1974 to 2013, with the majority of studies being published between 1994 and 2013 (M and Mdn = 1998). This scoping included qualitative, quantitative and mixed-method studies, representing 29%, 38% and 33% of the studies respectively (Fig.2). The studies were primarily observational (86%) (Fig.3), and the type of data collection was mainly represented by cross-sectional study designs (76%) (Fig.4).

Studies on the (non-)use of OLVAs reported high variability in the proportions of people possessing devices but not using them (range: 13%-50%, M=24%, SD=10%). The greatest proportion of prescribed OLVAs in these studies were utilized for near vision tasks. Some studies found especially high rejection rates of distance OLVAs as compared with near vision OLVAs.

Across the reviewed studies, “non-use” was defined in a variety of ways: functionally, comprehensively, directly determining the current use of the OLVA by the user, or based on one or a number of indicators (such as date of last use, frequency of use, average duration of use). In only a minority of cases did authors present a clearly refined definition of “non-use” at the outset of the study.

Four categories of variables were identified as being likely to be associated with OLVA (non-)use:

- The most reported category concerned the personal user factors. Several personal characteristics were identified, including demographic, physical, psychological, social-emotional, functional competence-efﬁcacy, adaptability, self-esteem, motivation, the availability of other material resources, and a combination of some of these cited factors. Some variables, such as age, diagnosis, visual acuity and type of visual ﬁeld deﬁcit were reported as contradistinctly inﬂuencing OLVA (non-)usage.

- Factors related to the device were categorized as 1) subjective aspects, such as frequency and duration of use, design or appearance, and ease of use; or 2) objective aspects, such as the device’s dimensions, weight, ergonomics, quality, visibility, maintenance, professional services and follow-up services.

- Factors related to the user’s environment referred to the social environment (encouragement or stigmatization), social circle (family, friends, helper) and physical environment (access to public transport, infrastructure of the user’s house).

- Intervention-related factors were concerned mainly with health care experiences, provisioning and attribution processes, instruction and training, and follow-up service.

Certain complex factors were inﬂuenced by several categories of these factors. There is a dynamic interaction between the four categories of factors inﬂuencing the use of OLVAs (Fig.5).

DISCUSSION - CONCLUSION

Only 24% of the included studies used a conceptual framework for developing their research. Among them, the theories included were mainly borrowed from the field of health psychology, but were not directly related to prediction of compliance behaviour.

Interestingly, some anticipated factor, such as quality of life measures or the taking into account user opinion during the OLVA selection process were not reported in this scoping. Moreover, one potentially negative factor that did not appear in these studies was the expense related to the device. Unexpectedly, the user’s satisfaction with the device was found not to be predictive of OLVA (non-)use. Few of the studies were longitudinal with follow-up assessments of usage rate, and very little information was available about changes in OLVA (non-)use over time.

This scoping review provides the preliminary evidence that factors related to OLVAs non-use could also be classiﬁed into four typical categories, sharing factors belonging to the theory of non-adherence. These results suggest that strategies applied to enhance adherence of a treatment might be useful to reduce non-use for OLVAs. The next step would be to attempt to predict the (non-)use of OLVAs using Health Psychology Theories.