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RESEARCH ARTICLE

A STUDY ON THE FUNCTIONING AND PROBLEMS OF TAILORS OF GANDHIDHAM AND ADIPUR REGION OF KUTCH

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ABSTRACT

In today's global era, peoples are demanding for more personalized tailors, designed garments. The most prime process in garment production is sewing. Final look of the garment is successful when the sewing is proper. Ultimately the proper sewing leads to many factors. So this paper explores the survey of 100 tailors in Gandhidham and Adipur unit, the researcher identified and described certain factors such as selection of needle according to weight of fabrics, brand of sewing machine, brand of needle, cost of needles, needle size, breaking of needles in a month, stitch problems and musculoskeletal pains faced by tailors. So a study on "sewing related problems amongst 100 tailors in Gandhidham, Adipur units of Kutch Region" was done. In this study tailors were suggested to use organ needles as its price is comparatively more but it breaks very less and ultimately it will be profitable for tailors as it save time as well as minimizing ergonomically problems, such as eye–strain, increases productivity leading to proper functioning.

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INTRODUCTION

In an even more globalized era, the garment industry is radically changing as consumers are demanding and hoping even more personalized products (Rikhil Nagpal *et al*., 2016). The elementary and foundational process of the garment production is sewing; it is the backbone of the course of production (Vedat Dal Mehmut Kayar and Engine Akcagun, 2014). Fabrics are the raw material used in tailoring and vary, based on fabric quality, weave structure, fabric weight etc. Fabric properties directly effect the material behavior during sewing. Fabrics are classified into three types according to its weight such as light, medium and heavy weight. Light weight fabrics such as muslin net are of less than 4 oz/yd^2, Medium weight fabrics such as cambric, poplin is between 4 to 6 oz/yd^2 and heavy weight fabrics like denim and fabric related to suiting are more than 6 oz/yd^2. While sewing needle must be according to the type of fabrics. For example a needle used for lingerie cannot be used for heavy upholstery or denim material (Sewguide.com/trouble shoot_sewing_machine_problems). Typically the material being sewn includes single and multiple plies of fabric or leather sometimes backed with plastics and needle heat up, is a major problem on sewing floor. In recent years in order to increase production, high–speed sewing machines have been extensively used. Currently, sewing machine speeds range from 1000–6000 rotation/minute (Rikhil Nagpal *et al*., 2016). The sewing needle is an important and vital machine member (Ghotnay and Hawary, 2015). It ensures the completion, beauty and durability of stitches (Vedat Dal Mehmut Kayar and Engine Akcagun, 2014). Machine needles are a must in order for the sewing to be done. Its properties, shape criterion and proper application of these needles directly affect the quality of the sewing (Vedat *et al*., 2014). Needle size is the main variable affecting the mechanical damage (Rikhil Nagpal *et al*., 2016). If the needle size is wrong or needle is damaged it leads to skipped, Irregular malformed stitches. However, if needle is too small it leads to frayed stitches. In the selection of needle it must be kept in mind that eye of the needle should be 40% larger than the diameter of the threads when going to the larger size thread, a larger needle should be used (www.schmetzneedles.com). One of the most common problems seen is breaking of needles, as more needles will break, tailors have to purchase more needles and ultimately his cost margin to buy needle will increase. Needle breakage occurs through many reasons such as use of pins while sewing, incorrect thread, needles break by using wrong type of fabric according to needle size, needle is improperly inserted, needle clamp screw is loose, needle thread tension is too tight and bobbin cartridge is in upside down (www.thrifyfun.com/

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repairmachines). The goal of this study examines that how long the sewing machine needle last (The life of a sewing machine needle has come to an end when the needle looses its proper function. But also here the human factor comes in because not every day the operator works the same depending on the physical and mental condition. If we put two operators side by side sewing the same work piece, same machine and same speed it can happen that the results are very different especially when we look in the needle consumption) (www.schmetzneedles.com). If we solve more of the needle problems than it is the easiest way to improve the stitch quality. So a study was conducted with the following objectives:

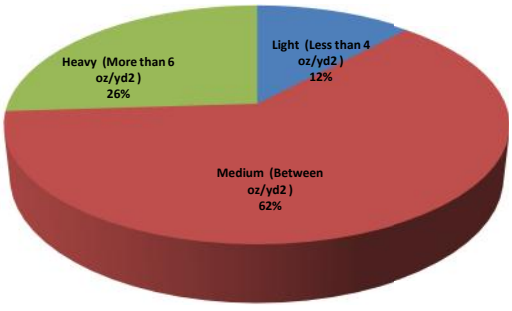
- To find out different weight of fabrics used by the tailors.
- To find out which brand of needle is more demanded.
- To observe the musculoskeletal pains amongst 100 tailors.
- To analyse how many needles break and consume in a month.

METHODOLOGY

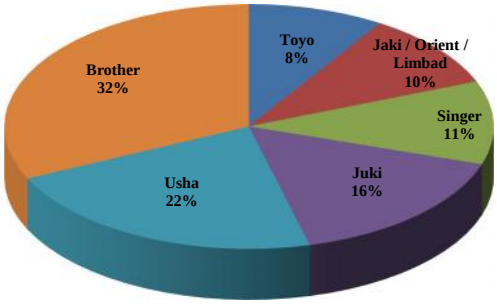
100 tailors in Gandhidham and Adipur unit were chosen for the study. Each tailor's unit was visited and observed with great attention. The researcher identified the day by day tailor's problems related to each components of sewing such as weight of fabrics (light, medium, heavy), needle number, brand of sewing machine and needle, breaking of needle packets in a month, cost of the needle, stitch problem and musculoskeletal pains faced by tailors. However the overall garment is assessed on the basis of seam quality that is directly proportional to needle and components of sewing. The researcher looked at work practices that effect to their quality of stitching, slow down of production and (sometimes workers led to health – hazards like musculoskeletal pain which is the common occupational health risk among the sewing machine operators) (Aderonke O. Akinpelu *et al.*, 2016) Everyday many products are sewn. That is why even a fractional progress can provide a big benefit. After the survey the problem were identified then finally a problem outline of work was framed.

Findings

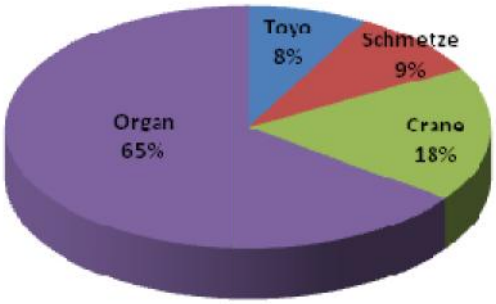
(1) Fabrics and sewing parameters are essential part in demanding the good seam quality. According to the fabric weight around 12 tailors was using light weight fabrics (less than 4 oz/yd^2) 62 tailors go for medium weight fabrics (between 4 to 6 oz/yd^2) and 26 tailors prefer heavy weight fabrics (more than 6 oz/yd^2).



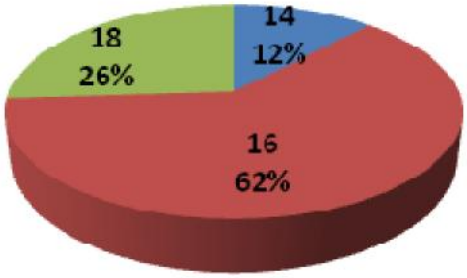
(2)While looking to the brand of sewing machine about 9 tailors use Jolly/Sonex/Toyo machine. 10 tailors prefer Jaki/Orient/ Limbad machine, 11 tailors have Singer machine, 16 tailors go for Juki machines, 22 tailors are using Usha machines and largely 32 tailors keep Brother machine.



(3)Needle, which is an important sewing element while observing the Brand of the needle, 8 tailors use Toyo needles, 9 tailors prefer schmetze needles, 18 tailors keep crane needles and 65 tailors go for organ needles.

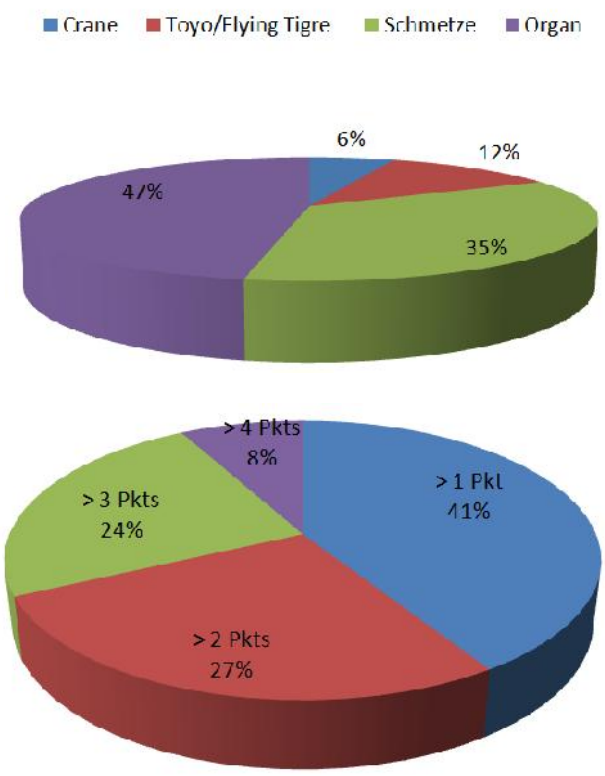


(4)While analyzing the needle number around 12 tailors use fourteen number needles, 62 tailors go for sixteen number, 26 tailors prefer 18 number. As the wrong needle size can create frayed stitches and irregular stitches.



5.While identifying the cost of needle (in Rs.) crane needle cost 10 Rs/per packet, Toyo/ Flying Tiger needle cost 20 Rs. per packet, schmetze needle cost 60 Rs. per packet and Organ needle is more expensive comparatively other brand of needle 80 Rs. per packet.

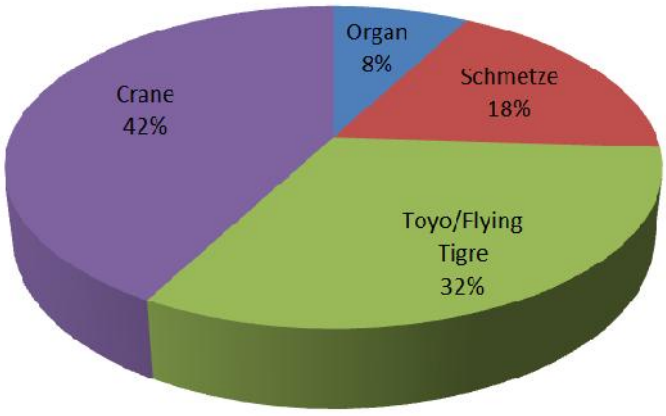
6.Breaking of needles which is a common sewing problem faced during sewing. This is the observation of breaking needle packets in a month as per the respondent about 41 tailors break less than 1 packets in a month, 27 tailors break less than 2 packets in a month, 24 tailors break less than 3 packets and 8 tailors break less than 4 packets in a month.

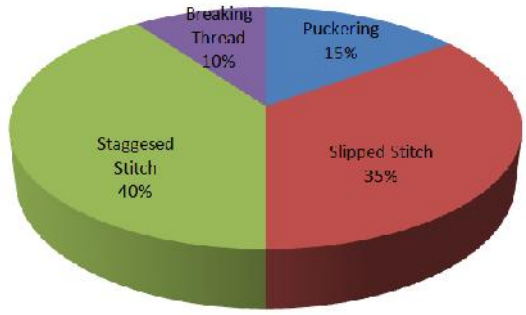


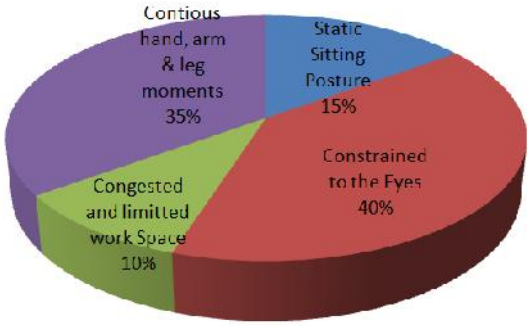
7.This is the observation of breaking needle as per the brand of the needle. Organ needle break 8 needles in a month, Schmetz break 18 needles, Crane breaks 42 needles and largely Toyo/Flying tiger breaks 32 needles.

8.According to the tailors saying many stitch problems are also seen such as puckering, slipped stitch, staggered stitch and breaking stitch. Around 15% tailors observe puckering, 35% tailors observe slipped stitch, 40% tailors observe staggered stitch and 10% tailors have faced the breaking of thread frequently.

9.Many tailors also face the health related problems like musculoskeletal pains. However 15% tailors are characterized by a static sitting posture, a forward inclined posture of the head and trunk and relatively uncomfortable ankle and knee angles, 40% tailors is constrained by the eyes for visual control of the work, 10% tailors face problems regarding congested and limited work spaces and 35% tailors have pains due to simultaneous hand and arm moments and the continuous operation of foot pedals.







Conclusion: For minimizing the sewing related problems, for which new training programs for tailors must have the good knowledge regarding the selection of needle according to the weight of Fabrics, good brand of needle and sewing machine, size of the needle according to fabrics. Tailors were suggested to use organ needles as their margin of purchasing needle in a month will be less as study shows that it withstand in sewing. In this study, it was suggested that awareness programs must be organized for tailors were suggested to reduce the threats to workers health and safety leading to more healthy work environment, minimizing ergonomically problems eye strain, increasing productivity with proper space management. This study can act as a guideline for minimizing the day by day sewing related problems faced by tailors.

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